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Only ONE tire gives
**POSITIVE CLEANING AND
 MAXIMUM TRACTION**

It's the
Firestone
GROUND GRIP

**THE TIRE THAT PULLS
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Mr. Extra Traction
 represents the
 Extra Bar Length
 that gives Superior
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**FIRESTONE
 GROUND GRIP
 TRACTOR TIRES**

THE experience of hundreds of thousands of farmers who use tractors daily under *all* weather conditions on *all* types of soil proves conclusively that *only* Firestone Ground Grips *always* give positive cleaning and maximum traction.

Ground Grips *alone* provide a triple-braced, continuous traction bar. There are no broken-bar pockets to catch mud and trash and cause slippage. The self-cleaning, connected bars are longer, giving more pulling surface in the all-important traction zone. Ground Grips made by Firestone, the pioneer and pace-maker, pull better longer. This has been tested and proved at the Firestone Farms.

For the best in music, listen to the "Voice of Firestone" with Richard Crooks and Gladys Swarthout and the Firestone Symphony Orchestra conducted by Howard Barlow every Monday evening over NBC network.

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FIRESTONE PUT THE FARM ON RUBBER

GIVE 'EM BOTH BARRELS!

S-W
ARSENATE
OF
LEAD

S-W
SPRALASTIC

FOR CODLING MOTH CONTROL

THE SHERWIN-WILLIAMS ARSENATE OF LEAD WITH S-W SPRALASTIC

is a winning combination that will conserve Arsenate of Lead by making every pound of it more effective, and also avoid the waste of uncontrolled run off.

S-W ARSENATE OF LEAD

A proven product which tests 98% pure Arsenate of Lead, which is 2% higher in content than some other Arsenates of Lead. S-W Arsenate of Lead contains not less than 30% arsenious oxide and the least amount of water soluble arsenic, which results in a maximum control of codling moth. Remember, the heaviest deposit is produced by Sherwin-Williams Arsenate of Lead.

S-W SPRALASTIC

The use of S-W Spralastic in combination with Arsenate of Lead results in a more uniform, heavier deposit for maximum control of codling moth. Spralastic actually causes three to four times more Arsenate of Lead to remain on the fruit by increasing the adhesive and spreading properties of the Arsenate of Lead particles and eliminating wasteful run off. A uniform, heavier coating, yet it is easily removed in the standard washing process.

These Recommendations apply East of the Rockies only

Send for Free Folders which will give you the full story on the effectiveness of these Sherwin-Williams Insecticides for maximum control of codling moth.

TO PREVENT
ARSENICAL INJURY
USE
SAFE-N-LEAD

Instead of using lime, protect apple foliage with Safe-N-Lead which neutralizes the water soluble arsenic found in Arsenates of Lead. Added to Arsenate of Lead in the spray tank, Safe-N-Lead converts the water soluble arsenic into a stable compound which will not "burn" apple foliage, but stimulates the growth of healthy green leaves which in turn aid in producing high yields of A-grade apples.

SHERWIN-WILLIAMS SPRAY MATERIALS

INSECTICIDE DIVISION

101 Prospect Ave., N. W.

Cleveland, Ohio



WATCH MYERS... for Major Improvements in **ORCHARD SPRAYERS**



**NEW DESIGNS • NEW TYPES • GREATER SPEED, CAPACITIES
AND COVERAGE • MANY BIG DEVELOPMENTS**



Are you planning to buy an orchard sprayer — for present or future needs? Then be sure to look into the many new developments coming out in the Myers line. They include: New models, new methods for greater speed and efficiency, exclusive features for more thorough coverage with less manpower. Also, new high-pressure, heavy-duty pumps with increased capacities — and many other major improvements throughout the Myers line of power sprayers. See your Myers dealer about these big developments that will be offered and talk with him about your present sprayer needs.

The F. E. Myers & Bro. Company, Dept. A-92, Ashland, Ohio

"GOING TO TOWN"
WILL SEEM A LOT
SHORTER—



There's a *Ford* in your future!

That trip to town won't be nearly the chore it once was. For in the days of peace there'll be a new Ford—a big, sturdy car that will make it smooth-going all the way. . . . Then you'll watch the miles melt into the air. In front seat or back, you'll ride at ease—fully relaxed.

. . . But that's not all! Many other refinements will be found in this new car. Smart, improved styling. A new richness, inside and out. And, of course, the famous thrift and economy and sturdiness that are traditional with all Ford cars. . . . We'll be ready to start production

whenever we get the "go-ahead". Until then, of course, our full resources are devoted to speeding Victory.

FORD MOTOR COMPANY



PRESSURE AT THE NOZZLES

That's where pressure counts

Pressure that drives the spray through the thickest trees and carries it to the very top center. Pressure that holds steady and even, hour after hour... with little or no attention from you except to direct the guns.

That's the performance you get from a BEAN because it's built right into the outfit. The BEAN Sprayer is tough. It's rugged. It's designed for long, hard, trouble-free operation. And built of materials that combine strength and durability with minimum weight.

You're fortunate if you own a BEAN. Especially now when materials are restricted and output is limited. For we can't meet all demands this season, though we're building all the outfits possible from the material allocated by the War Production Board.

**THAT'S
PRESSURE
FOR YOU!**

**YEP!
KEEPS IT
UP, TOO**



FMC Fog Fire Fighter...a fast-moving, self-contained fire fighting machine that operates at 800 lbs. pressure



WATER BUFFALO...famous fighting amphibian, designed and built by Food Machinery Corporation

NO LUBRICATION TROUBLES

The powerful Drive-End of the BEAN "Royal" Pump is sealed in... dirt, dust, and grit are sealed out! And the whole Drive Assembly operates in a constant bath of clean oil. This type of lubrication, plus the exclusive BEAN design with heavy-duty Eccentrics instead of an ordinary crankshaft, insures longer pump life, a saving of power, and low-cost, trouble-free operation. Moreover, the Solution-End is as compact and dependable as the Drive-End... and as free of trouble!

**JOHN BEAN
MFG. CO.**

Division of
Food Machinery Corporation
15 Hosmer Street
Lansing, Michigan
104 West Julian Street
San Jose, California

BEAN SPRAYERS

WITH SEALED-IN CRANKCASE LUBRICATION

LETTERS TO THE EDITOR

"I Will Have . . ."

Dear Sirs:

Can I buy about a dozen of your October, 1944, issues of your magazine?

When Senator Byrd was a boy, like Harry III, who is shown on page 9 of your October issue, I was making a delivery of fruit to his mother. Tom, Dick, and Harry all were present and I told them to help themselves to some fruit. One took a bunch of grapes, another took a pear, and another took an apple. Then their mother remonstrated, saying that she would buy fruit for them, but they must earn it. She said, "Tom, have you mowed the lawn?" He answered, "I will mother."

Then little Harry spoke up, "Never mind, wait 'till I grow up. I will have a great big farm, like Mr. Birmingham, and I'll put it all out in apples." Coraopolis, Penna. L. O. Birmingham

Senator H. F. Byrd surely did make good his remark since he now raises approximately one per cent of all apples, grown in the United States. His fame as an apple grower and as Senator of the United States is a combination that is hard to duplicate. If he were contemplating apple orchards of his own when he was a small boy, we wonder what were his ideas about the Senate at that same time.—Editor.

Black Walnut Trees

Gentlemen:

In a recent issue of *Country Gentleman*, there is a small article, reporting that Black Walnut trees prove harmful to some other trees and plants, particularly apples and pears which might be planted close by. The poisonous or seriously damaging effects are said to spread from roots of the Walnut trees.

Have you had any releases on this?

Chicago, 6, Ill. A. B. Martin

According to our source of nut data, it is a rather common observation that certain plants are adversely affected by roots of

the Black Walnut tree. The injury is much more serious than that resulting from shade and root competition alone. Apples, grapes, and currants are among the fruits in which injury, like this, has been observed. The December, 1943, issue of *AMERICAN FRUIT GROWER* carries an article on the toxicity of Black Walnut roots.—Ed.

Some Advertising . . .

Dear Editor:

On the reverse of this postal card is a picture of a bunch of grapes, raised on my premises. By special cultural methods, I have induced grapes to ripen here 90 to 110 days later than revealed in their regular or normal seasons of ripening. San Antonio, Texas Chas. F. Ward

The methods you have employed to accomplish this would probably be of vast interest to our grape-grower readers, but what intrigues us most on first impulse is the swell advertising job you have done on your postal card. We're reproducing it below for the benefit of both our readers and our advertisers.—Editor.

"Lovely as a Tree . . ."

Dear Editor:

I often wonder about the people who planted the shade trees along the highway and in the park, the fruit trees in our orchard. There is something about planting trees that ties people to a place, and which makes them an indelible part of the place for long after they are gone.

There is a story about the old man who, when asked why he bought and planted fruit trees in his late time of life, replied: "They will be good for someone else."

That the story continued to say he lived to eat some of the fruit from off those trees, pleases me immensely.

Thorsby, Ala. Caroline Thomas

Trees, especially fruit trees which contribute so much to daily living, are something about which one may justifiably become sentimental and thoughtful. The fruit growers, like the old man, plant for the future as well as for today.—Ed.

Correction Please!

Gentlemen:

To keep your records straight I should like to point out that Bushrod Washington was not the son of Lawrence Washington, as is stated on page 10, October issue, of your magazine. He was the son of George Washington's brother, John Augustine who married Hannah Bushrod.

Bushrod's estate was "Nomini," south-east of Wakefield and later he inherited Mt. Vernon. He was a Justice of the Supreme Court for 31 years. E. Falls Church, Va. L. H. Weld

We stand profoundly ashamed of our historic misinformation. Thanks for the correction.—Editor.

Calendar of Coming MEETINGS and EXHIBITS

Jan. 3-4—Maryland State Horticultural Society annual meeting at Hotel Alexander, Hagerstown.—A. F. Vierheller, Sec'y, College Park.

Jan. 3-4—Fifty-first annual meeting of the Massachusetts Fruit Growers' Association, Inc., in Horticultural Hall, Worcester.—William R. Cole, Sec'y, Amherst.

Jan. 8-9—Annual meeting of the Horticultural Society of Central Illinois, Quincy.—Raymond Leeper, Ursa.

Jan. 9-11—Annual meeting of the Pennsylvania State Horticultural Association at Harrisburg.—John U. Ruef, Sec'y, State College.

Jan. 10-12—Annual meeting of the New York State Horticultural Society at Seneca Hotel, Rochester.—H. M. Putnam, Assistant Sec'y, Lyons.

Jan. 12-13—Annual convention of Utah State Horticultural Society at Hotel Utah, Salt Lake City.—A. Stark, Sec'y, Salt Lake City.

Jan. 15-16—Annual meeting of the Horticultural Society of Southern Illinois, Carbondale.—Curt E. Eckert, Belleville.

Jan. 23—Vermont State Horticultural Society annual meeting in the Memorial Auditorium at Burlington.—Chas. H. Blasberg, Sec'y, Burlington.

Jan. 23-24—Annual meeting of the Tennessee Nurserymen's Association at Hotel Hermitage, Nashville.

Jan. 24-26—Eastern meeting of the New York State Horticultural Society at Kingston.—H. M. Putnam, Assistant Sec'y, Lyons.

Jan. 25-26—Annual convention of the Tennessee State Horticultural Society at Hotel Hermitage, Nashville.—G. M. Bentley, Sec'y, Knoxville.

Jan. 27—Annual meeting of the Tennessee State Beekeepers' Association at Hotel Hermitage, Nashville.

Feb. 8-9—Annual meeting of the Kansas State Horticultural Society at the Kansas State College, Manhattan.—Geo. W. Kinkead, Sec'y, Topeka.

Feb. 8-9—Annual meeting of the Idaho State Horticultural Association at Hotel Boise, Boise.—A. Harold Davidson, Sec'y, Nampa.

Feb. 9-10—Fifty-second Annual Convention of the West Virginia Horticultural Society at Martinsburg.—Carroll R. Miller, Sec'y, Martinsburg.

THE ONLY TREE SUCCESSFULLY TOP-BURNED IN A WINTER MONTH

34 DAYS LATER

6 YEARS LATER

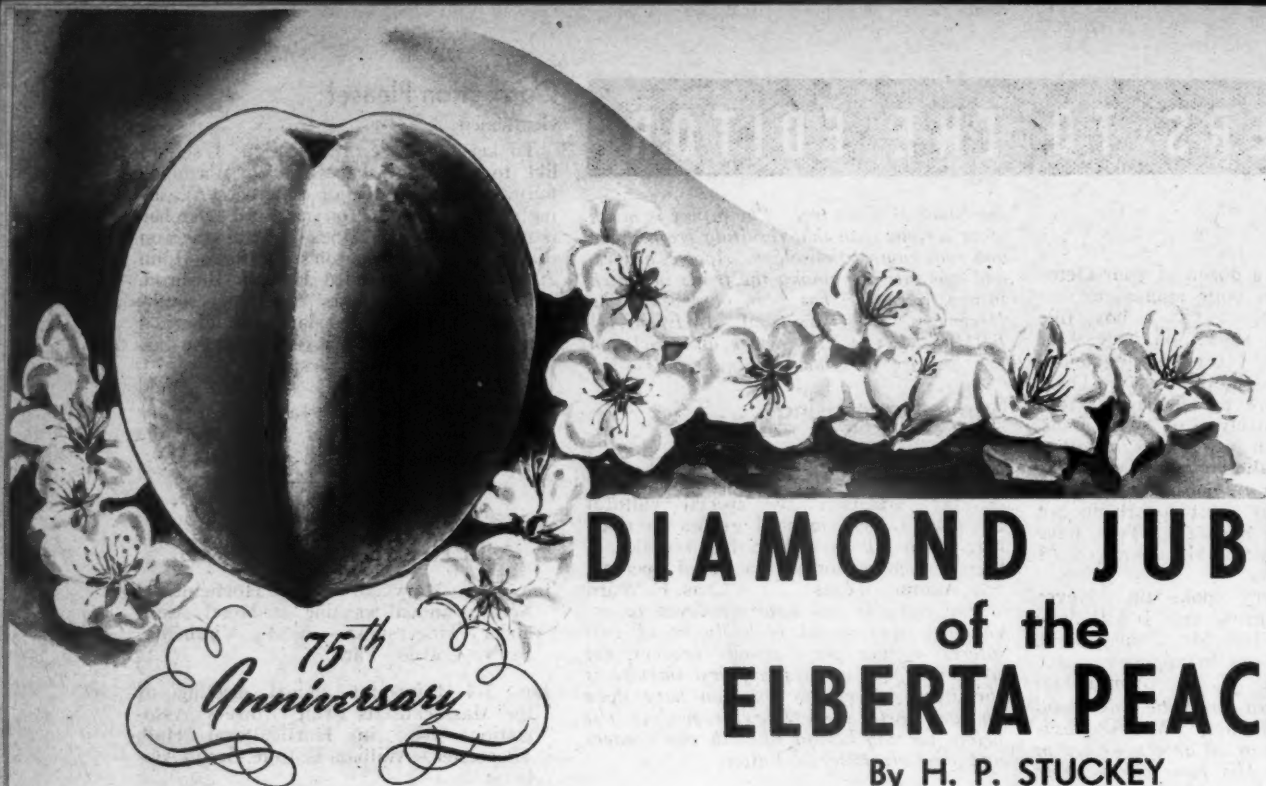
IN FIRST COMPLETE THE BRIDGE OF ICE-GRAFTING PEARS IN EVERY MONTH OF THE YEAR

CHARLES F. WARD
HORTICULTURAL SPECIALIST

1111 LEE HALL STREET
SAN ANTONIO, TEXAS
PHONE: P-2-1365

ICE DAYS AFTER GRAFTING

PHOTOGRAPHED JUNE 21-1934



DIAMOND JUBILEE

of the ELBERTA PEACH

By H. P. STUCKEY
Georgia Experiment Station

THAT Chinese Cling peach seed planted by Samuel H. Rumph at Marshallville, Georgia, in 1870 which produced the Elberta variety was the real starting point of a great commercial peach industry in Georgia. The growing of the Elberta has since spread to many other points of the world where peaches are grown. The Elberta remains a leading variety in Georgia, and in practically all parts of this country, in the far northwestern states of Oregon and Washington, on the shores of Lake Michigan, as well as in the greenhouses of Amsterdam, Holland.

The following brief quotations will indicate the way in which the Elberta rates as a peach variety in several different sections of this country:

Arkansas Experiment Station Bulletin 414, "Approximately ninety percent of the commercial acreage has been devoted to the Elberta variety. It has also been the leading variety in home orchards."—1941.

Massachusetts Experiment Station Bulletin 399, "Elberta is the most widely grown and best known peach east of the Rocky Mountains."—1943.

Ohio Agricultural Extension Bulletin 252, "Elberta—this is the leading commercial variety for Ohio."—1944.

United States Department of Agriculture Year Book, "Elberta—this is the leading commercial peach in the United States today. It was originated in Marshallville in 1870 and in the 67 years since that time no better peach has been found, when all characteristics are considered."—1937.

Washington Experiment Station Bulletin 359, "Elberta peach trees constitute 55.8 percent of all trees in Yakima County. It was the most important variety in 1936."—1938.

Results of work with Elberta chance seedlings and crosses indicate that the Elberta carries both white and yellow flesh characters in its makeup. There was no doubt a very unusual linkage of chromozones in the creation of this outstanding and long-lived variety which has held its lead over all other varieties for seventy-five years. It is frequently found, in both plant and animal breeding, that superior individuals resulting from crosses are themselves very poor breeders. It is no surprise, therefore, that a very large majority of Elberta seedlings produce fruit inferior to the parent tree.

Elberta seeds from some isolated open pollinated trees at the Georgia Experiment Station produced trees of which the majority bore yellow-fleshed fruit. In the collection, however, of more than five hundred trees, some bore white-fleshed freestone, some white-fleshed clingstone, some yellow-fleshed freestone, and some yellow-fleshed clingstone. It was interesting to note that less than five percent of the trees produced fruit equal or superior to the Elberta.

M. A. Blake at the New Jersey Experiment Station has had a long and fruitful experience in peach breeding. He reports that one objection to the Elberta peach as a parent is that it transmits lack of hardiness. Yet, by crossing the Elberta with more hardy varieties he has produced some with considerable

cold resistance. The Golden Jubilee, he says, is a second generation seedling of the Elberta. His Goldencrest variety, which is still popular in southern New Jersey, had the Elberta as one parent, and a cross between the Elberta and Greensboro as the other parent. The Primrose, another New Jersey variety, was developed from a cross between Elberta and Belle.

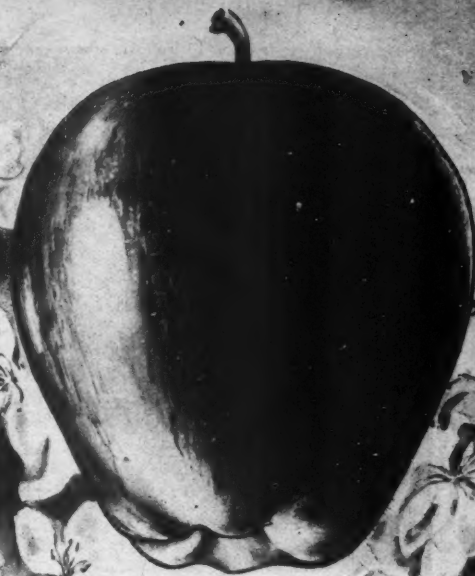
Stanley Johnston, a most successful peach breeder at the South Haven, Michigan, Experiment Station, states that the J. H. Hale has been a better parent than the Elberta in his peach breeding work, even though it is thought by some that the Elberta is one of the parents of the J. H. Hale. We lack complete facts on this point.

J. H. Weinberger, of the United States Bureau of Plant Industry, and located at Fort Valley, Georgia, has accepted the results of other peach breeders in their finding that the Elberta is not an exceptionally good parent in the creation of better varieties. He has, however, used several descendants of the Elberta with varying results. Some of these are such varieties as Valiant, Vedette, Halberta, Redelberta, Goldencrest, and Golden Jubilee.

The Early Elberta, a bud sport discovered by P. M. Sullivan of Concord, Georgia, is almost identical with the Elberta except that it ripens a week earlier. It is gaining favor in Georgia as a commercial variety.

Records show that in the year 1857 a very progressive banker by

(Continued on page 30)



50th
Anniversary

GOLDEN JUBILEE of the DELICIOUS APPLE

By T. J. TALBERT
University of Missouri

THE apple industry, apple consumers, and apple lovers everywhere salute the Delicious apple on the occurrence of its Golden Jubilee (1895-1945)—fifty years of outstanding success and development. We may, therefore, proudly and justly honor both the Delicious apple and the apple industry of America.

The Stark Brothers' Nursery and Orchard Company, Louisiana, Missouri, merits genuine commendation and hearty congratulations for having the good judgment, wisdom, foresight, and initiative, even in the face of stern opposition and discouragement, to believe in Delicious, push its introduction and sale by the expenditure of nearly three-quarters of a million dollars.

Perhaps few realize that the merest chance saved the Delicious and that tremendous hazards were encountered and overcome in its introduction. The characteristic shape, large size, and color of the fruit coupled with the attractive flavor and aroma and the distinctive knobs or points of the calyx end, make it, without doubt, the best known apple.

It was Jesse Hiatt, the stubborn and persistent old Quaker of Madison County, Iowa, who found Delicious and brought its merits to the attention of the public. In his orchard a seedling apple tree grew by chance and was to become famous. Upon finding the apple sprout, Hiatt, believing it to be worthless, cut it down. That was a close call for such a valuable apple. Next spring, however, the seedling was up again,

making a better growth than ever. Looking at the little tree, Hiatt said: "Well, you are so determined to live, I will give you a chance, although you are out of place."

In the early growth of this tree, blooms appeared but only one apple ripened. This was treasured highly for its shape, knobby end, wonderful fragrance, and streaked strawberry color. With the first taste of the apple, Hiatt declared to his wife, "This is the best apple in the world." He named it the Hawkeye and in later years the fruit was exhibited at local and county fairs throughout the country. It attracted but little attention and standard varieties usually won the prizes and recognition. Nevertheless, Hiatt continued to persuade his friends to help him promote the sale of Hawkeye.

Finally he sent a sample of four specimens to Louisiana, Missouri, to compete in an apple show staged by Stark Brothers Nursery. C. M. Stark, senior member of the firm, was constantly on the lookout for just such new fruits and he solicited exhibits from everywhere. In fact, he carried in his pocket a little notebook in which he kept a list of suitable names for new fruits.

When opening the package from Madison County, Iowa, Stark recognized immediately the outstanding quality, flavor and aroma of the fruits. He exclaimed, "This shall be the Delicious apple. I have kept this name for years for this very apple."

In an effort to determine the origin of the sample, he found through a mix-up in labeling that the exhibitor

of the fruit was unknown. Great disappointment prevailed because this apple had given him a thrill of a lifetime, as it met all the requirements for the name "Delicious." He gave orders, therefore, for the holding of the apple exhibit the following year that all exhibitors of the previous year should be urged to send exhibits. This he believed was the only method that might induce the grower of the prize apple to exhibit again.

The old Quaker had learned the lesson of patience and perseverance and he stoutly maintained that his Hawkeye apple would finally secure recognition. He, therefore, sent another exhibit to the Stark Apple Show.

This time Stark went through the exhibits more carefully and anxiously than ever. He knew the apple the moment the package was unwrapped by its unmistakable shape, fragrance and color.

He wrote to Hiatt immediately and all propagating rights were purchased without delay. Hiatt's Hawkeye apple then became Delicious, the nation's leading apple, and the old Quaker after twelve years' waiting and work, discouragements and disappointment, finally received his reward.

In 1922, a monument was erected to the original Delicious tree, with an inscription which read in part as follows:

"To commemorate the discovery in Madison County, Iowa, of a variety of apple by Jesse Hiatt, 1872, and called by him 'The Hawkeye.'"

(Continued on page 31)



Poor tree and foliage growth is displayed by these unfertilized apple trees.

FERTILIZER OUTLOOK

By J. R. MAGNESS

Head Horticulturist-in-Charge, Division of Fruit and Vegetable Crops and Diseases, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, U.S.D.A.

AMERICAN agriculture has been fortunate during these war years in having available quantities of fertilizer approximately equal to its needs for increased crop production. This liberal fertilizer supply has been in part responsible for the phenomenal record of crop production during the war years. Thus the average tonnage used during the period 1935 to 1939, inclusive, was for actual nitrogen 368,000; for P_2O_5 , 758,000 and for K_2O , 373,000. During 1943-44 the nitrogen us-

age increased to 625,000; the P_2O_5 to 1,300,000 and the K_2O to 604,000 tons. These tonnages are of the actual plant food components in fertilizer, not the tonnage of fertilizer materials. Thus the total plant food usage in the form of fertilizer for 1943-44 was approximately 170 percent of the pre-war usage. The nitrogen used in 1943-44 was 170 percent of prewar.

Nitrogen fertilizer supplies in sight for 1944-45 are slightly below the quantity used in the past year. Present



These healthy vigorous trees are a result of good culture and fertilization.

prospects are for approximately 575,000 tons actual nitrogen or about 8 percent under last year's usage. There is an increase in the quantities of ammonium sulfate (mostly used in mixed fertilizers and for top-dressing in Western areas where soils tend toward alkalinity) and Chilean nitrate of soda available but a decrease in synthetic nitrate of soda, ammonium nitrate and nitrogen solution. Cyanamid is still greatly limited for fertilizer use.

The supplies of superphosphate are expected to be about 14 percent below those of a year ago because of greatly increased demand for phosphorus and sulfuric acid in munitions manufacture. There is an increased supply of potash fertilizer available.

While the fruit industry in general is mainly interested in nitrogen supplying fertilizers, some of the very important fruit sections require liberal applications of phosphate and potash for maximum production. This applies particularly to the large citrus industry in Florida, to the peach and nut industries of the Southeast and to orchards in the Atlantic Coastal Plain. In most other sections of the United States, orchard trees respond mainly to nitrogen although the use of superphosphate in many sections is to be recommended for the improvement of the cover crop or sod growth.

The slight reduction in supplies of nitrogen and phosphate available for use this year are not extensive enough to be of great importance to the fruit grower. He should, however, order his fertilizer and get it delivered as early as possible. In fact, it should have been done before this article appears.

During the war period, maximum tonnage of fruit production is more important than optimum finish on the fruit. Therefore, the grower is probably justified in using fertilizers, particularly nitrogen, in rather liberal quantities. Where phosphate has been used in past years in the orchard, primarily to increase cover crop growth, a temporary curtailment in the amount used for one or two years will be of little detriment to the welfare of the orchard. In areas where phosphorus is recognized as a limiting factor in the growth and development of the trees, its use in usual quantities should be continued.

Applications of nitrogen made in the spring should be early—preferably a month before bloom—in order to assure the nitrogen being carried into the soil, and being available for uptake by the trees during the period of rapid spring growth.



PLUMS THAT DO PAY

By **GEORGE L. SLATE**
New York Experiment Station

PLUMS have received very little attention from eastern growers in recent years and the acreage of this fruit in the eastern states is much less than in 1910. Growers have felt that plums did not pay, and, as they were grown, this was probably true. It should be noted, however, that the number of plum trees on the Pacific Coast has increased considerably since 1910 and that substantial quantities of plums have been regularly shipped to eastern markets. If plums can be hauled across the continent and sold profitably, eastern growers who wish to diversify may well look into the possibility of producing plums for local markets. To compete it will be necessary to grow much better fruit than that produced by unthinned Burbank and Lombard plum trees.

Varieties

Plums in the various species and varieties may be grown in nearly all parts of the United States and even as far north as the prairie provinces in Canada. Commercial production in the East for the general market is limited to the fruit growing areas in the vicinity of the Great Lakes, but plums may be grown for home use or local markets over much larger areas. The domestica, or European type of plum, is generally preferred for commercial purposes and plantings should be restricted to a few of the best sorts.

Stanley, a relatively new variety,

is possibly the best plum for commercial planting, for the general as well as the local market. The plums are large, prune-shaped, deep blue in color, freestone, and they ripen in early September in Central New York. This variety keeps well on the tree and after it is picked. The tree bears heavy annual crops and is considered to be one of the most resistant of the European plums to low winter temperatures and spring frosts. Stanley has been well-tested by growers and experiment stations in the eastern states and it may be planted with confidence.

Italian Prune (Fellenberg) is another standard variety that has stood the test of time. It is well-known and popular on the markets and it always sells well, being favored for canning and pies. The principal fault of this variety is a tendency to light crops, but, where it is known to be productive, Italian Prune is an excellent variety to grow.

Pacific is a variety that has been grown very little but it has performed well in southern Indiana, New York, and Ontario and should be tried in other sections. The plums are large, blue, freestone and they ripen in midseason. In wet seasons a tendency to cracking has been noticed. The trees bear heavy crops.

There are many high-quality plums deserving of a place in the home orchard. Washington, New-

ark, Pearl, and Jefferson are richly flavored varieties of the Green Gage type. Imperial Epineuse, a red prune type, and de Montfort, a blue variety that hangs long on the tree, are of excellent quality. Until these varieties have been tasted, one does not know how good plums can be.

The Japanese plums are sometimes profitable because of their earliness and showy appearance, but they are not as resistant to low winter temperatures or to spring frosts as the European types. Burbank is one of the hardiest and best known, but others are larger and more handsome. Formosa is very large and produces heavy crops in alternate years. Abundance is good for home use. Methley and Beauty are among the earliest of all plums and it may be useful for starting the season on local markets.

The Damson plums are prized for jam and plum butter and they have a place in every orchard supplying nearby markets. Shropshire is best known, but French is larger and probably is the best variety available. In sections too cold for other plums several of the varieties developed at the Minnesota Experiment Station are well-worth growing. Monitor, Redwing and Underwood are among the best as grown at Geneva, N. Y.

Pollination

Many, but not all plum varieties,

(Continued on page 24)

"HIGH PERCENTAGES" of CLEAN FRUIT

By T. H. PARKS
Ohio State University

WHILE there were many disappointments associated with the production of the apple crop of 1944, the end of the season found more Ohio commercial orchardists with extra clean fruit than there have been previously. A check-up of 86 orchards made during the harvest season by representatives of the Ohio Spray Service showed that 21 of these growers had produced crops of fruit that scored above 98 percent clean. In previous years only a few outstanding orchards attained this figure. In searching for the answer to this improvement among Ohio fruit growers, the entomologists and plant pathologists were forced to conclude that the growers have been willing to apply more sprays, are more careful in timing them, and are becoming more efficient in application to get better spray coverage. Six of these orchards had no apple scab present, and in four no codling moth blemishes could be found.

The prebloom and blossom period of 1944 were very favorable for apple scab infection. The crop in a few orchards, which did not receive com-

plete early spray programs, was very badly infected with scab. The entire season was very favorable for codling moth, since dry hot weather which prevailed during the summer promoted a heavy second generation of larvae during August. Those orchardists, who in previous years had serious trouble with codling moth, either made little progress against it in 1944, or paid homage to it with more than the usual number of fruits blemished. While many of the non-problem orchards were better, the "codling moth problem" orchards became worse. For every 10 apples found blemished by apple scab, 13 were found blemished with codling moth during the check-up. This represents the comparative abundance of the two chief causes of cull apples in Ohio's 1944 crop.

Scoring above 99 percent clean are six orchards, while in 1943 only one orchard—that of W. H. Feicht and Son of Greenford, Mahoning County—scored above 99 percent clean. The rating of these test orchards was secured by counting and classifying the blemishes on 2,000 to 3,000 apples



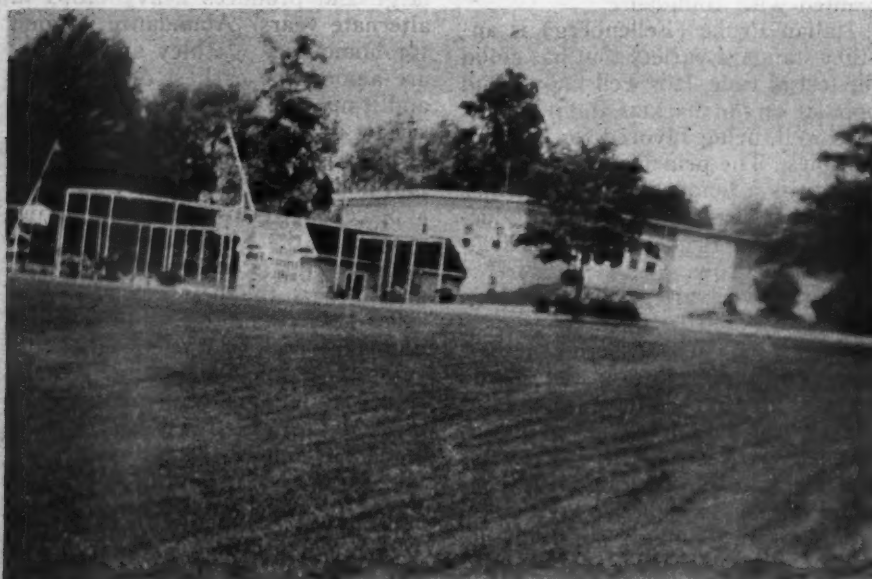
Franklin Dietsch ranked highest among Ohio growers with his 99.93 percent clean fruit. Here he is in a leisure moment with Maurice, the youngest of Riverside's six cherry pickers.

Outstanding 1944 Ohio Growers		
Orchard	County	Percentage
Franklin Dietsch	Williams	99.93
Peterloon Farm	Hamilton	99.38
Ralph Ladd	Athens	99.26
Quick & Son	Summit	99.20
C. E. Holdren	Washington	99.19
Oren Cope	Columbiana	99.13
W. R. Woodburn	Washington	98.94
Emery Leow	Ottawa	98.89
R. L. Gilmore	Coshocton	98.82
R. D. Heller	Ottawa	98.70

taken from different varieties and different locations in the orchard. Only orchards over 14 years of age were included in the survey and 4 to 6 commercial varieties were checked for blemishes. These included San Jose scale, codling moth, apple scab, curculio, red bug, apple maggot, blotch, bitter rot, Brooks spot, and bud moth. Apples deformed by aphids were not included in the check-up. Injuries caused by cankerworms, red mite and apple flea-weevil, which are primarily pests of foliage, were not included because their injury to the fruit is entirely indirect. The 21 orchards scoring above 98 percent clean are, with one exception, those which had never been seriously infested with codling moth.

The orchard which stands in first place this year is that of Franklin Dietsch of Edgerton, Williams County, Ohio. It scored 99.93 percent clean. No apple scab or codling moth was found in the total number of fruits inspected in the Dietsch orchard. Not a single codling moth blemish was found during the 2-hour visit in the orchard. This is a remarkable record. The only blemishes which could be charged against the management program in this orchard were a few minor deformed fruits due to plant bugs that are directly associated with tall grass and with undergrowth beneath and between the trees.

(Continued on page 28)



The Riverside Orchard cold storage plant has a capacity of over 20,000 bushels.

"PEDIGREED" NURSERY STOCK

By H. B. TUKEY

New York Experiment Station

THE McIntosh variety of apple, which has now become the leading variety of the Northeast, came from Dundas County, Ontario, Canada, where it originated from a chance seedling in about the year 1811 on the land of John McIntosh. He previously had left the Mohawk Valley of New York State to take up residence in Canada in about 1796. From conversation with fruit growers and residents in the vicinity of where the McIntosh originated, and from examination of fruit from trees said to have been propagated from McIntosh trees on the McIntosh farm, the writer is inclined to believe that the original tree bore fruits of a solid red color.

Yet, fruit growers and nurserymen have often remarked on the variation in the coloring of fruits of McIntosh, such as a blushed or a striped appearance. Some nurserymen select budwood from fruiting trees of especially high color and performance; in fact, red strains of McIntosh are offered by the nursery trade.

Nevertheless, it is exceedingly difficult to be sure that differences in color, performance and general appearance may not be due to cultural conditions. No incontrovertible facts are available either to prove or disprove whether there really are different strains of the McIntosh variety. The feeling among many horticulturists has been that there is little truth to contentions of superiority of advertised strains or improved types of known varieties, that there is no "pedigreed" nursery stock in the sense that bud-changes have occurred which alter the type materially.

More recently, however, some interesting facts have appeared which reopen the subject to review and ask if after all there may not be such a thing as superior selected stock.

The story goes back to the Paragon and Arkansas varieties of apple,



This illustrates one source of McIntosh budwood which budded with USDA 227 successfully.

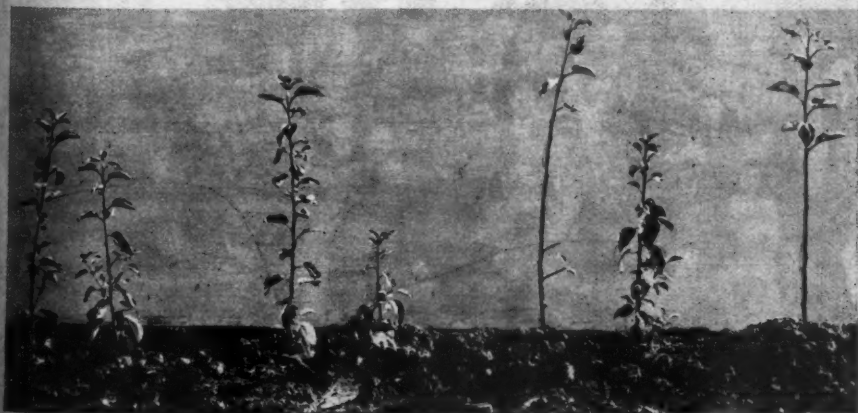
which are grown to limited extent in the Virginias and the Ozark region. Controversy for a long time has asked whether they were identical or whether they were two distinct varieties. To the confusion of those who contended that the two varieties were distinct, "Paragon" fruits were picked from Arkansas trees and "Arkansas" fruits were picked from Paragon trees. Yet, the sum total of tree and fruit characters were enough to separate Paragon from Arkansas in the eyes of some critical observers.

In 1938, Professor T. J. Maney of the Iowa Agricultural Experiment Station found that when he propagat-

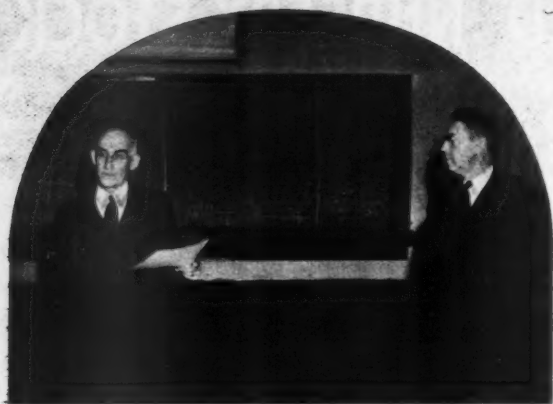
ed the Paragon variety onto Virginia Crab trees as a body stock, the resulting top-worked trees were vigorous and characteristic of the variety, but when he propagated Arkansas onto the same stock, the resulting trees were quite dwarfish. In other words, just as a photographic plate or a photoelectric cell may be used to reveal differences which are not apparent to the human eye, so the Virginia Crab material distinguished differences between the Paragon and Arkansas varieties.

Next, Dr. J. A. McClintock of Purdue University found that there was a difference in congeniality of the Stayman and of the Blaxtaylor varieties when top-worked onto Virginia Crab. Blaxtaylor is supposedly only a color-sport of Stayman and is supposed to vary from that variety solely in color, yet here was a difference in more than color alone. Still earlier, Olav Einset of the Geneva Station had reported a most significant variation between Duchess of Oldenburg and the color sport, Van Buren Duchess. He found that the Van Buren Duchess could be used as a pollinizer to set fruit on Duchess, whereas Duchess will not set fruit with its own pollen. Here, then, was

(Continued on page 32)



McIntosh budwood from another source, when budded with same USDA 227, was uncongenial.



CLOSE-UPS

at the

FRUIT SCHOOL



Photos courtesy Dept. of Horticulture, Ohio State University

Upper left: Dean John F. Cunningham, College of Agriculture, presents a diploma to grower Wilbur Reynolds. Left: Among the speakers were, left to right: W. R. O'Brien, Soil Conservation Service; Dr. J. R. Magness, U.S.D.A.; Dr. J. H. Gourley, Ohio State University; Frank Beach, extension horticulturist; and C. D. Blubaugh, an Ohio grower. Below: Scene from banquet held at the Faculty Club.



This is a representation of fruit-grower students and their instructors who attended the annual Ohio Fruit School on December 4, 5, 6, and 7.



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"ON THE LIPS OF GROWERS"

As Revealed in Grower Discussions at the Ohio Fruit School

By ELDON S. BANTA

VARIETIES, stocks, contour planting, pruning, fruit storage, disease, and insect problems were among the subjects reviewed by 150 Ohio fruit growers December 4-7 at their first annual Fruit School in three years. For more than 40 growers it was their first attendance at such a school, and they helped to swell the attendance to the largest on record since its inception in 1928. This session was the first held since Pearl Harbor.

Originally, Dr. J. H. Gourley, Chief in Horticulture at Ohio State University together with his staff organized the school at the request of a number of Ohio's progressive fruit growers. The subject material for this year was enthusiastically received and heartily discussed by the "students".

Highlighting the program was Dr. J. R. Magness, principal horticulturist of the United States Department of Agriculture. His discussion on fertilizer practices emphasized the necessity of regular annual applications of fertilizer in order that the fruit tree may be kept in a constant state of high productivity. This is seen from the fact that it requires from one to two years to bring a tree deficient in nitrogen into good growth. Nitrogen fertilizer, he explained, can best be applied in the fall since the tree continues the uptake of nitrogen from the soil all through the winter except when the ground is frozen. The nitrogen thus taken into the tree is stored and is right where it can do the most good the following spring when growth begins.

The grower-students were interested to know the effects of nitrogen fertilization upon fruit color. Excess nitrogen, they were told, brings about luxuriant foliage but at the same time a poorer color of the fruit. Furthermore, such a condition in an orchard may bring about a heavier early drop of immature fruits. The best fruit color is obtained when nitrogen fertilizer is applied in the fall. The color is only fair when applied in the spring and very poor when applied during the early part of the growing season. Chemical analysis of the leaves was indicated as a possible practical means of determining the nitrogen and other fertilizer requirements of fruit trees.

Peach growers were interested to

learn of a new and speedy method of thinning. It is known as the "brush method" and was first used in Georgia a few years ago. It merely consists of brushing the flowers from the tree during blossom with a brush consisting of wire or dogwood branches tied together. Southern growers have found this method satisfactory, speedy and labor-saving.

In the name and by the authority of
The Ohio State University
THIS CERTIFICATE
Gilbert Meister
has pursued the following
Short Course in the College of Agriculture



In testimony whereof the Signatures of the Dean and Secretary of the College of Agriculture and the Instructor in charge are hereunto affixed.

Given at Columbus, Ohio, on the 20th day of March, 1943.

'BACK TO SCHOOL

By Gilbert Meister

I, Gilbert Meister, Vice-President of American Fruit Grower, proprietor of "Headlands Orchard, Mentor, Ohio, went back to school for four days. It is true, I've been in long pants and out of school a long time, but it didn't seem unnatural to sit and squirm through classes at the Ohio State Fruit School on December 4th, 5th, 6th, and 7th.

Activity in the Horticultural Building on the campus of Ohio State University at Columbus, Ohio, went on as usual except for the added presence of a hundred or more fruit growers who, like myself, were taking this opportunity to learn a little more about this business of fruit growing. It seems that, no matter how long you've been growing fruits, there's always something more to learn and at this special school session there were classes on everything that you might want to know.*

There were splendid classes conducted by Dr. W. P. Judkins of the Ohio State Experiment Station, who

(Continued on page 39)

Spraying by air seems to be out for the time being. Experimental work thus far does not indicate its wide applicability to orchard pest control. The question of dusting came up for discussion, and growers learned that it gave equally good control of diseases as spraying did in the Eastern states during the past year. There is an increasing interest in dusting to supplement early spraying for scab control on apples.

The speed sprayer, a new type of sprayer, came up for discussion. Some of its advantages were pointed out. It requires less labor to operate, does the job quicker, and the cost of the outfit is not greatly different from that of a comparable power sprayer. During the past 2 or 3 years it has found quite wide application in Delaware, eastern Maryland and to some extent in the level regions of the Shenandoah Valley.

The speed sprayer operates on the principle of blowing the spray material into the tree rather than on the use of high pressure. The material is picked up from a number of small nozzles by the blast of air from an aeroplane propeller, thus literally blowing the fine mist out over and into the tree. This method of spraying has given excellent control of codling moth in the adult stage when nicotine was used.

Up-to-the-minute information on harvest and deblossoming sprays was dispatched to the growers. Dr. A. Van Doren of Ohio State's Department of Horticulture presented the results of these sprays in New York state. The deblossoming, or fruit thinning sprays as they may be called, have been most effective in thinning Early McIntosh, Yellow Transparent, Duchess, Wealthy, Baldwin, Golden Delicious, and Rome Beauty. These are rather marked biennial bearing varieties and therefore thinning is a most important practice with them. During the "on-year" the trees are sprayed the first day of full bloom, or just as the lateral flowers of the cluster open. The central flower has previously opened and pollination has taken place. The caustic spray will not effect this central flower, but theoretically it should kill all the lateral flowers which have just opened when the spray is applied. The spray

(Continued on page 34)

1944 FRUIT REVIEW

A NEW record was set by the fruit world in 1944 when approximately 16 million tons of fruit were produced. Combined production of the 8 major deciduous fruits (commercial apples, all peaches, grapes, cherries, plums, prunes and apricots) for 1944 is now expected to be 20 percent above the 1943 production and 9 percent larger than average. Among these fruits the following percentage increases over last year are recorded: Commercial apples 39, peaches 71, pears 20, cherries 75, plums 15, apricots 214. Production of grapes and prunes declined 11 percent and 20 percent respectively from 1943. Cranberries are in very short supply, being 46 percent below last year.

Aggregate tonnage of all citrus is estimated at 6 percent less than in 1943-44 but 44 percent greater than the 10-year average. Aggregate tonnage of grapefruit for 1944-45 is now indicated to be 15 percent less than in 1943-44 but 44 percent more than the 10-year average. Indicated aggregate tonnage of oranges is now 4 percent less than last season but 48 percent more than the 10-year average.

The total 1944 production of the 4 major tree nuts (walnuts, almonds, pecans and filberts) is now estimated at 13 percent more than in 1943 and 44 percent more than the 10-year average.

Deciduous and citrus fruit prices received by farmers in 1944 were generally at levels approximately twice the averages for the 5-year (1935-39) period. Prices for the 1943-44 citrus crop averaged slightly above prices for the preceding crop. Most deciduous fruits of the 1944 crop, however, have averaged slightly lower in price than those during the 1943 short crop year.

Prices received by farmers for apples on October 15, 1944 were nearly as high as the year before, even though the 1944 apple crop was about one-third larger than the 1943 crop. The principal factors contributing to the relatively high prices received by farmers for fruit this year are attributed by the Bureau of Agriculture Economics of the Department of Agriculture to high consumer incomes and large noncivilian requirements.

Fresh fruits have been the principal class of fruit available to civilians during the past year. Generally plentiful have been the supplies of fresh citrus fruits from the record

large 1943-44 crop, most of which was marketed in 1944. Fresh deciduous fruits have also been plentiful for civilian use from the generally large 1944 crops. Because of large noncivilian requirements, however, civilian supplies of canned fruits have continued to be short.

Government demands for citrus by-products in 1944 were less than in the previous year, thus making more fruit available for civilian consumption. During this winter, citrus fruits will comprise the principal fresh fruits, although apples, pears, grapes, and cranberries will also be of considerable importance. Civilian supplies of fresh citrus fruits, particularly oranges, are expected to be

Commercial Apple Production

Area	Average 1934-42 (Thousand bushels)	1943	Indicated 1944
N. Atl.	34,581	26,238	34,941
S. Atl.	20,032	9,498	23,451
N. Cent.	21,534	14,448	18,968
S. Cent.	1,376	1,041	1,123
Western	44,856	37,825	45,684
Total	122,378	89,050	124,167

Peach Production

Area	Average 1933-42 (Thousand bushels)	1943	Indicated 1944
N. Eng.	210	7	218
Middle Atl.	3,956	2,189	4,903
E.N. Cent.	4,563	2,309	6,839
W.N. Cent.	900	90	351
S. Atl.	11,978	2,949	14,086
E.S. Cent.	4,219	1,785	4,049
W.S. Cent.	4,403	1,950	4,839
Mountain	2,241	3,221	3,594
Pacific	25,153	27,680	33,045
Total	57,618	42,180	71,924

ample this season, despite heavy damage to the Florida citrus crop caused by the hurricane last October. Production in other areas, such as California and Texas, has been large this season, and this, in part at least, will offset reduced supplies from Florida.

The prospects for canned and dried fruits for civilians are from 10 to 20 percent smaller than last season. More frozen fruits and as much canned fruit juices as last season will probably be made available to civilians. Only a very small percentage of total fruit supplies is made up of frozen fruits, but canned fruit juices, mostly citrus juices, are of considerable importance.

Apples

The Nation's apple crop in commercial areas of the United States is estimated at 124,167,000 bushels.

Apple production for 1944 is now indicated to be 39 percent larger than last year's crop of 89,050,000 bushels, but is only 1 percent above the 9-year (1934-42) average production.

Peaches

Peach production in 1944 totaled 72 million bushels, and was 71 percent larger than last year's 42 million-bushel crop and also 24 percent larger than the 10-year (1933-42) average of 58 million bushels.

Pears

Indicated 1944 production of pears is 29,611,000 bushels or 20 percent above last year's crop of 24,585,000 bushels and 4 percent above the 10-year (1933-42) average of 28,559,000 bushels.

Cherries

In the 12 important producing States, the production of all cherries was 205,030 tons in 1944, compared with 116,510 tons in 1943 and the 10-year average production of 154,968 tons. The production of sweet varieties of 84,050 tons was only slightly larger than the 5-year (1938-42) average, while the 120,980-ton production of sour cherries was 33 percent larger than the 1938-42 average production.

Plums

The 91,200-ton plum crop of California and Michigan this year is nearly one-third larger than the 10-year (1933-42) average and 15 percent larger than the 1943 crop.

Apricots

The 1944 apricot crop of California, Washington, and Utah, the important producing States, totaled 333,300 tons, fresh basis. This was over three times last year's short crop of 105,500 tons in these three States. The 10-year average production for these States was 231,975 tons.

Grapes

The 1944 grape crop is now estimated at 2,638,850 tons—11 percent below the 1943-record crop of 2,972,900 tons but 11 percent above the 10-year (1933-42) average of 2,371,410 tons.

Prunes

The total 1944 prune crop of 499,500 tons (fresh basis) is 20 percent smaller than the 1943 production and 21 percent less than the 10-year (1933-42) average.

(Continued on page 35)

Better Fruit in the New Year



BLACK LEAF 155

A non-caustic protection for foliage and fruit quality. Controls codling moth, aphids, leafhoppers, bud moth, leaf miners, pear psylla, and grape berry moth.

*The
Reward
of
Constant
Vigilance*

BLACK LEAF 40

Every quality apple is worth more when prices run as they have during the war period. Black Leaf 40 is effective against green and rosy aphid, bud moth, red bug, leafhopper, pear psylla, and codling moth and helps bring a good crop of high quality fruit.

FOR PROTECTION AGAINST APHIDS

Spray Early and Often

One aphid sting is all that is needed to cause an imperfect apple. Protect your fruit by proper aphid spray.

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THE Fortieth Annual Meeting of the Washington State Horticultural Association, which met in Yakima December 4, 5, and 6, differed from past meetings in that it was patterned after a two-ring circus. Two meetings were in session simultaneously all day Tuesday. This plan was an experiment insofar as the Washington State Horticultural Association program committee was concerned. The experiment, I am glad to say, worked exceedingly well. The crowds which attended these two meetings were far in excess of those which attended former meetings at any one time.

The program was planned to cover apples, pears, cherries, peaches, and apricots, which are the leading tree fruits of the state. Sectionalizing the meeting encouraged discussion that would not have developed in a larger meeting, and also made it possible for the program committee to schedule four or five papers on each of the above named fruits, rather than one or two.

Apple Section

The control of insect pests was one of the questions to which considerable attention was given. The use of trunk sprays for controlling codling moth was a new approach to the problem. M. A. Yothers described this process in detail. He stated that Dinitro-Ortho-Cresol, 4 pounds, and stove oil, 10 gallons, mixed with several other ingredients and sprayed upon the trunks and scaffold branches of mature bearing apple trees in March, killed from 85 to 95 percent of the over-wintering codling moth larvae. This simple method of reducing the codling moth population, Mr. Yothers pointed out, will greatly reduce the percentage of wormy apples at harvest.

W. J. O'Neill of the Tree Fruit Branch Experiment Station reported that, although DDT appears to be an excellent insecticide for controlling codling moth, it permits the mite population to become very serious. He also related that fluorine sprays gave good results in codling moth control. It would appear that insecticides which can be substituted for arsenate of lead soon will be available and used rather generally. These substitutes will be of particular interest to apple and pear growers in the Northwest.

Pruning mature apple trees is a subject in which all growers are interested. Rodger Hamilton of Okanogan, Washington, pointed out that apple trees, by their very nature, take a lot of punishment. He stated that if they were unable to do so, most of the trees in the State of Washington would be dead, because of the radical pruning in this area.

It is Mr. Hamilton's opinion that

HIGHLIGHTS of the WASHINGTON MEETING

By
**JOHN C.
SNYDER**

Secretary-
Treasurer



pruning should be as light as possible. He does not believe, however, that it should be neglected in any way. Pruning and fertilization should go hand in hand and the trees should be kept in good vigor as determined by the amount of terminal growth and the size of the fruit. Mr. Hamilton explained that many orchards have produced less than capacity crops for the simple reason that they have been pruned too much.

Fruit Storage

A new fruit storage angle was of special interest. Edwin Smith of Wenatchee related that the fruit on many apple trees ripens at different times. It is generally true that the fruit on the south side of the tree ripens before that on the north side. It is also true that trees in an orchard do not ripen their fruit at the same time. Those on light soils may ripen their fruit three or four days earlier than those on heavy soils. Mr. Smith stated that by picking fruit at different times, and keeping it separate throughout the handling process, the condition of the fruit may greatly improve when it reaches the eastern consumer. Fruit that comes from the orchard in a ripe condition should never be mixed with, nor sold with, fruit that can be held longer. This short-lived fruit, therefore, is brought into the storage and kept separate to be held longer. The short-lived fruit, according to Mr. Smith, should be sold first.

Powdery mildew of apples affected some varieties of apples during the past season. Dr. E. J. Anderson of the State College of Washington pointed out that this disease can be controlled by the use of dilute applications of lime sulphur.

In much of our experimental and extension work of the past several decades, attention has been focused

primarily upon the development of better materials. Little has been given to the improvement of better ways of using the materials we have. To bring out the importance of using good methods of spraying, several papers were prepared on this general phase of pest control. Chad Karr of Yakima, for example, pointed out that by following a certain system of going from tree to tree, many steps could be saved compared with systems he had used formerly. He also pointed out that using discs as much as one-fourth inch in diameter enabled him to reach the tops of the trees with ease. The use of these larger openings obviously necessitated using larger hose. This "greater volume" adjustment in his equipment requires more material than the older type, but it also reduces labor and reduces the amount of worm infestation. Figures on a dollars and cents basis prove that the advantages greatly offset the disadvantages.

Cherry Section

Pruning mature cherry trees was the lead-off question in the cherry session. Many different ideas of pruning mature cherry trees were presented. These ideas varied mostly in degree of pruning. No one discussing pruning believed that cherry trees should not be pruned. All agreed that some pruning was necessary to keep the trees within bounds and to keep fruiting wood developing continually throughout the tree. However, it was not the feeling of this group that pruning could be substituted for fertilization in any way.

Peach and Apricot Section

Robert E. Cowin of Yakima, who grows apricots in a relatively early section of the State, discussed the apricot variety question. He stated that, for a variety to stand the commercial test over a long period of time, it must produce large fruit with a pleasing appearance and good shipability. It must also be capable of bearing heavy crops relatively early in the life of the tree. According to Mr. Cowin, Moorpark is the variety most acceptable to the fresh fruit market. Among the canning varieties are Tilton and Blenheim. Other varieties being grown by Mr. Cowin are Riland, Perfection, Chinese, and Phelps. Mr. Cowin thinks these varieties are still in the experimental stage.

Ed Gensinger, one of the leading Moorpark growers, pointed out that the Moorpark tonnage may be expected to increase considerably in the future. He suggested that a study be made concerning the possibility of developing additional ways of using it.

Mr. David B. Perrine discussed
(Continued on page 42)

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"GREEN LIGHT"

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Crop Reports

ACCORDING to the Bureau of Agricultural Economics, U.S.D.A., the aggregate production of the eight major deciduous fruits in 1944 is estimated to be about 20 percent larger than in 1943 and about 8 percent larger than the 10-year (1933-43) average.

The 1944-45 citrus crop, despite hurricane damage in Florida, is now expected to be between last season's record output and the previous record crop in 1942-43. However, the prospective crop of early and midseason oranges, which provides most of the marketings from October through April, and the grapefruit crop, are each about one-sixth smaller than the preceding crops.

To date a record large production of fruit was achieved in 1944—approximately 16 million tons.

Ceilings for Juice Oranges

THE WAR FOOD Administration and the Office of Price Administration announced last month that the average grower price for oranges, to be used in arriving at the canners' ceiling prices for the 1944-45 pack of canned single-strength orange juice and blended orange and grapefruit juice, will be \$47.55 per ton for Florida and \$41.55 per ton for Texas, f.o.b. packing house or roadside.

Ceiling prices for oranges from California and Arizona were not announced as juice packs in these States are made primarily from summer oranges.

W.F.A. Sales

LEE MARSHALL, Director of Distribution, War Food Administration, points out that the greater part of Government-owned food, not needed by the armed forces and other agencies for which W.F.A. buys, goes back to the processors who sell the food to wholesalers and other trade groups.

Leading the sales of all foods in November were fruit and vegetable products for which sales amounted to \$723,725, or 65 percent of the month's total food sales which amounted to \$1,111,668.

Sales made by W.F.A. of all Government-owned foods for the seven-month period from May 1 through November totaled \$24,058,319.

Fruit Prices

PRICES RECEIVED by growers in 1944 for fruit, both citrus and deciduous, generally were at levels approximately twice the averages for the 5-year period of 1934-39. Prices for the 1943-44 citrus crop averaged slightly above prices for the preceding

NATIONWIDE NEWS

crop, while, in contrast, prices for most deciduous fruits of the 1944 crop are averaging slightly below those for the 1943 crop.

Although the 1944 apple crop is about one-third larger than the 1943 crop, prices received by growers for apples on October 15, 1944, were nearly as high as a year earlier.

The United States Department of Agriculture attributes these high prices to continued high consumer incomes and to large non-civilian requirements.

Less Phosphate Fertilizer

LAST YEAR approximately 7,600,000 tons of superphosphate were available but, according to estimates of the War Food Administration, there will be a little less than 6½ million tons available for the 1945 crops. This reduced supply of superphosphate may cause a reduction in the production of mixed fertilizers, but W.F.A. does not plan to change the approved fertilizer grades which provide for high plant food content.

No recent changes are reported in the supply situation for nitrogen which is scarce in relation to its requirements. Potash remains relatively plentiful.

New Appointment

SECRETARY OF Agriculture, Claude R. Wickard, has announced the appointment of A. W. Turner as Assistant Chief of the Bureau of Plant Industry, Soils and Agricultural Engineering. Mr. Turner was President during the past year of the American Society of Agricultural Engineers.

Canada's Apple Crop

ACCORDING TO the last estimate of fruit production in Canada, the apple crop for 1943-44 is approximated at 16.5 million bushels. This is almost equal to the record production of 1933.

Water in the West

LAST YEAR Congress appropriated \$1,025,000 to carry out the provisions of the Water Facilities Act which provides for assistance to farmers in developing and utilizing water for farms and ranches in the western states where rainfall is insufficient. This appropriation covers the period from July 1, 1944, to June 30, 1945.

The Farm Security Administration

handles this program of water development which operates in the following 17 states: Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.

Wage Ceilings

AN HOURLY RATE of 90 cents has been set by the War Food Administration's Director of Labor for workers, engaged in pruning fruit and nut trees in certain areas of California. This is the maximum rate. A "learner," one who has less than 7 days' experience in pruning any kind of fruit or nut tree, receives 75 cents hourly. If workers are paid on a piecework basis, the stipend paid must not exceed the cost that would occur if the work were paid for on an hourly basis.

W.F.A. Pays \$300,000

MORE THAN \$300,000 were paid to Massachusetts apple growers by the War Food Administration as a result of the hurricane purchase program, according to Lawrence Southwick, of Massachusetts State College.

Total shipments amounted to about 218,500 bushels of which more than one-half were McIntosh apples. Prompt disposal of so large a volume of damaged apples had a very beneficial effect on the apple market.

Used Car Restrictions

A FARMER OR fruit grower who buys a used car primarily to carry on his business is not considered a "consumer," according to OPA. He is in the same category as a salesman or doctor who uses his car for work. Such buyers are not entitled to recover in case they are overcharged.

Congress made a distinction in the Price Control Act between the person who buys a commodity for personal or family use and the one who buys for use in the course of trade or business. It is therefore doubly important that such buyers make sure of the ceiling before they close the deal.

Cold Storage Report

Cold storages were more fully utilized on December 1, 1944, than on any previous date on record, according to a report of the National Apple Institute. The percentage of space occupied in apple cold storages was 89 percent compared with 85 percent when these storages were carrying the record loaf of apples which was produced in 1942. The total bushels of apples in all storages on December 1 this year approximated the holdings of December 1, 1942.



Is Woman's Work on the Farm Going to Change?

Right in your own community you know of many women in the last few years who have pitched in and helped fit, plant, cultivate, do chores and bring in the crops.

They have done this work cheerfully in addition to their regular household duties. They have lent a strong hand to the war effort. But will their added efforts in this emergency result in any permanent changes in their work in more normal times? That depends.

If they live on farms where work is done the old-fashioned backbreaking way, it is a foregone conclusion that they will drop any field work as quickly as possible.

But on farms mechanized the modern way, with the Ford-Ferguson Tractor and Ferguson Implements, it is more than likely to be quite different. For when

a man's farm work becomes easier, simpler, faster, and he has the extra time and energy to enlarge his profit-making activities, one of his first desires will be to lighten his wife's household work.

Then woman's energy, too, will be saved. Healthful, outdoor work on the Ford-Ferguson Tractor . . . work that is as easy as driving the family car . . . will be a welcome change from the old-fashioned household routine.

These women will feel that same deep satisfaction from making crops grow, from creating wealth out of the soil, that has held generation after generation of men to the land.

Yes, we feel there is good reason to believe that woman's work on the farm is going to change—a change that will add a new and vital energy to the family farm, the foundation of America's freedom and democracy.

AS EFFORTLESS AND SIMPLE TO OPERATE AS HER HOUSEHOLD APPLIANCES

Not only does the modern farm woman find the Ford-Ferguson Tractor, with its automotive type controls, as easy to drive as the family car. She also changes implements with no more effort or complication than shifting the attachments on her vacuum cleaner.

Raising or lowering the plow or cultivator with the Ferguson Finger Tip Control is as easy for her as throwing the lever to start the wringer on her electric washing machine.

The Ferguson System's mechanical "brain" controls furrow depth in much the same way that an oven temperature control "watches" her pies while she plows.



*The only Tractor
that Automatically
Changes its 'Weight'
to Suit the Job.*

HARRY FERGUSON, INC. • Dearborn, Mich.

STATE NEWS

MICHIGAN—The 74th Annual Meeting of the Michigan State Horticultural Society was held at Grand Rapids on December 5-7 with a record daily attendance of 1,600 to 2,000 fruit growers.

"The future of the fruit industry is bright," said Stanley Johnston, Superintendent of the South Haven Experiment Station, "but growers should be aware of the danger of over-expansion at this time." Asserting that experience gained after the last war should be a lesson to the industry, he added "now is the time to pay debts and get ready for lower prices." The peak in fruit prices already has passed, according to Mr. Johnston, and even relatively high prices should not be expected for more than a year after the war.

Mr. Johnston was presented with a gold watch by the Society in recognition of his twenty-five years of valuable service to the fruit industry.

Guest speakers included: Dr. George D. Scarseth, Director, American Farm Research Association of Lafayette, Indiana; and John Chandler, Executive Secretary, National Apple Institute, Washington, D.C.—T. C. Stebbins, *Extension Horticulturist*.

MASSACHUSETTS—With several home-made brush pushers now in successful operation, there is considerable interest among Massachusetts growers in this time-saving equipment. At least six commercial growers are planning to construct brush pushers this winter. By throwing the prunings midway between the trees, it is a simple matter to push them to one end of the row instead of gathering them up by hand in the usual way. The best use of a brush pusher is limited to level orchards which are reasonably free from stumps and boulders.

Looking forward to the postwar period, a number of commercial apple growers are now using either a bulldozer or a power shovel for removing crowding filler trees or blocks of old tall trees. There is more interest than there has been for several years in the rejuvenation of our bearing orchards by bringing about better spacing of the trees, removal of older trees, and planting of young trees.

The use of methyl bromide as a fumigant to control rodents in apple cold storages is a new development. Research work at Massachusetts State College has shown that this gas is very effective in killing rats and mice, and, when properly used, it is apparently not harmful to the fruit. Two storages were experimentally fumigated this past fall and other commercial trials are planned.

Strawberry acreage in the Falmouth area dropped in 1944 to about 170 acres from a pre-war average of more than 500 acres. This reduction was due largely to the fact that strawberries require a large amount of hand labor and, at the present time, a large proportion of the younger generation of farm workers is in the armed services or in employment in industry. A large increase in strawberry production is not expected until

there is promise of larger margin of profit or until laborsaving equipment is available.—Lawrence Southwick, *Mass. State College*.

RHODE ISLAND—Howard W. Hathaway, widely known fruit grower, died recently at his home in Portsmouth. He was 67. He was Manager and part-owner of Willow Lake Orchards and owner of the Hillcrest Orchards. He also was a member of the Connecticut Pomological Association, the New Jersey Peach Council, the Massachusetts Fruit Growers Association, and the Rhode Island Fruit Growers Association.

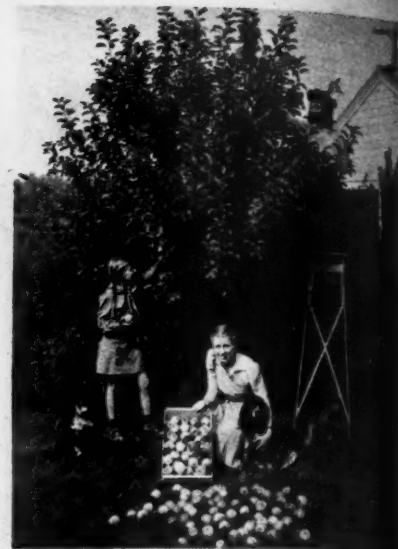
Fruit growers from all parts of the Eastern States regret his demise.

TENNESSEE—It recently has been reported that codling moth infestation ran as high in the tops of trees in some sprayed orchards as it did in unsprayed orchards, but Harold Needham, Manager of Judge Spragins' orchard at Jackson, has spraying equipment which adequately meets this problem.

After several years of scraping and banding trees, screening the packing shed, and carrying out a heavy spray schedule without satisfactorily controlling codling moth in this orchard, Manager Needham built a 16-foot tower on his sprayer. This has done the trick. He has cut wormy fruit down from about 30 to 10 percent during the past season. He attributes this to the fact that, by spraying from the top of this tower, he has been able to wipe out infestation in the tops as well as in the lower parts of the trees.



Harold Needham, Manager of Judge Spragins' orchard, Jackson, Tenn., gets good coverage in the tree-tops by the use of this tower.



This six-year-old Haralson apple tree grows in the yard of Kenneth McFarland, Valley City, N.D. Although it was intended to be a shade tree, it produces good crops which daughters, Joan, Judy and Barbara proudly harvest.

Tom Anderson, whose orchard is located at Toone, has had similar experience. Last year his 12-year-old orchard produced a wormy crop. Although he was not convinced that he had slighted the tops of the trees in his spraying operations, he decided to have a tower built last winter. Satisfactory results of this year's spraying have sold him on the importance of thorough top spraying.—A. N. PRATT, *State Horticulturist, Nashville*.

INDIANA—Growers in this State are urged to "double up" on the 1945 production of strawberries and to put plants away for the winter with extra care. It is estimated that the commercial strawberry acreage in Indiana for the coming year will be approximately 75 percent of this year's crop. This is all the more reason that it will be worth the time and expense involved in mulching the strawberry beds this winter.

OREGON—A new development promises growers of Persian walnuts in the Pacific Northwest a method of controlling bacterial blight with less labor, simpler and less expensive equipment. Plant scientists of the Agricultural Research Administration, U.S.D.A. and the Oregon Agricultural Experiment Station found that this troublesome disease can be controlled practically with copper-lime-sulfur dust (20-40-10), or yellow cuprous oxide-sulfur dust (8-15).

OHIO—The Annual Meeting of the Ohio State Horticultural Society will be held in the Netherland Plaza Hotel, Cincinnati, February 7-8. Commercial firms, selling supplies and equipment to fruit growers, will be represented with exhibits. The banquet is scheduled for Wednesday evening, February 7.

Among the scheduled speakers are: Dr. H. C. Young, Ohio Experiment Station; C. C. Allison, Extension Pathologist, Ohio State University; Porter Taylor, Fresh Fruit and Vegetable Cooperative Association, Washington, D.C.; Dr. L. F. Steiner, U.S.D.A. Entomologist, Vincennes, Indiana; Walter C. Dutton, Dow Chemical Co., Midland, Michigan; and Dr. Geo. W. Darrow, U.S.D.A. national authority on small fruits.—Frank H. Beach, *Sec'y, Columbus*.

Other F

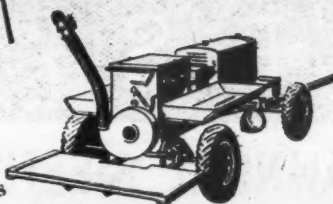
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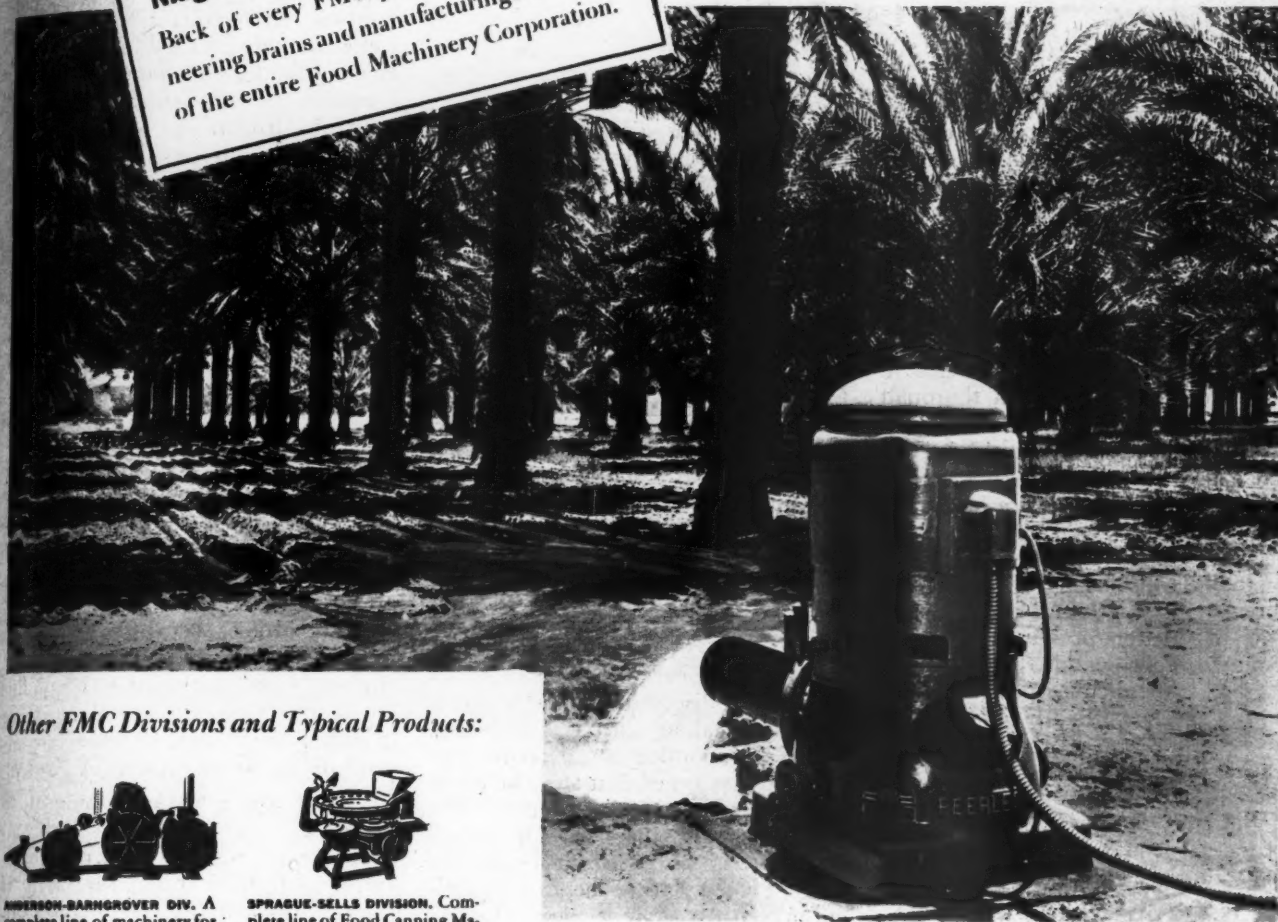
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NIAGARA SPRAYER & CHEMICAL CO., INC. DIVISION. Insecticides to protect crops from insects, diseases. Middleport, N. Y.; Jacksonville, Fla.; Burlington, Ont., Can.



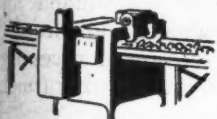
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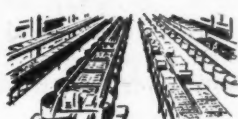
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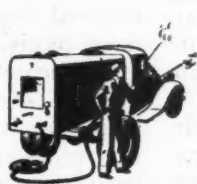
TEXAS DIVISION... Food Protective Processes, Fruit & Vegetable Packing Equipment, Canning Machinery. Harlingen, Texas.



FLORIDA DIVISION... Citrus and Vegetable Packing Equipment, and Food Protective Processes. Dunedin and Lakeland, Florida.



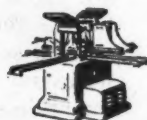
"WATER BUFFALO" amphibious tanks. 7 of Food Machinery Corporation's 14 major factories are making "Water Buffalos" or sub-assemblies.



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RIVERSIDE DIVISION. Citrus Packing Equipment, Automatic Box Making & Lidding Machinery, Fruit and Vegetable Protective Processes. Riverside, California.

Peerless Pumps

...bring deserts to life...supply water for entire cities

The irrigation pump pours out torrents of cool, clear water from deep underground, and arid wasteland turns green and bears fruit. In great cities and humming factories, batteries of pumps supply hundreds of thousands of gallons of life-giving water every minute. *Wherever water is pumped*—cities, factories, ranches, overseas with our armed forces—Peerless Pumps are known and preferred. Whatever its type—Turbine, Hi-Lift or Hydro-Foil—every Peerless Pump embodies the superb engineering, advanced design and sound construction that is typical of *all* products made by FMC.



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A P S

SIXTIETH ANNUAL MEETING

By H. L. LANTZ, Sec'y

BETWEEN four and five hundred fruit growers, professional horticulturists and friends attended the Virginia State Horticultural Society meeting which was held in joint session with American Pomological Society at Roanoke, December 5-7. Problems of soil management, pruning, spraying and fruit maturity were discussed by leaders in the pomological world. Wartime problems in labor and marketing got a thorough going over. The program was well-balanced from start to finish.

If this reporter appraised the situation correctly, there were a number of subjects which were unusually well received. Dr. M. J. Dorsey, Head, Dept. of Horticulture, University of Illinois, in reviewing problems in peach production, presented facts that stimulated considerable thinking. Said Dorsey, "An average peach tree of bearing age generally has ten to twelve thousand blossoms. If more than 1200 peaches are left on the tree, fruit size will suffer. If 3000 peaches remain on the tree, fruit size will be small. By actual count, 400 peaches per bushel means 1¾" peaches. Where 3000 peaches remained on the tree, the fruit ran 400 to the bushel. Failure to thin or to thin enough means small peaches."

For years the peach industry has suffered because peaches were picked too green and immature, resulting in low market quality and consumer rejection. Dorsey remarked, "You growers and I too do not eat green peaches. Then why expect the women to buy green immature peaches?" Marketing tests in the big chain stores of St. Louis last year demonstrated that, when the trade was offered both tree-ripened and green peaches, the tree-ripened fruit was purchased at once, and with less loss to the grocer than occurred with the green peaches. When peaches are allowed to reach a tree-ripe stage of maturity, full color and quality is developed, and during the seven days following the green maturity stage of picking, the fruit actually gains 24 percent in size. In other words, 100 bushels of peaches at the green picking stage makes an increase in size up to 124 bushels in seven days to reach the tree-ripe stage of maturity, according to Dr. Dorsey.

J. T. Bregger, Orchard Erosion In-

vestigations, U.S.D.A., Clemson, South Carolina, discussed the principles of conservation of moisture and irrigation. Weather records, Bregger pointed out, show that during the last 28 years, at some time during 24 of those years, moisture in addition to rainfall was needed to properly mature fruit crops. Total annual rainfall is sometimes ample, but much of it may be lost due to run-off or to leaching. Conservation of rainfall may be accomplished by proper contouring, by sod or sod strips, or by a combination of correct practices in managing the soil cover.

National Horticultural Council

The need for some representative council was first presented to the fruit industry at the St. Louis meeting last winter by F. A. Motz, International Commodity Specialist, U.S.D.A. A half-day of discussion at the Virginia meeting, dealing with this question, led to the adoption of a resolution in which it was urged that steps be taken to organize a national council. The desirability and the need for such a council was discussed at length by B. S. Pickett, Head, Dept. of Horticulture, Iowa State College; C. W. Kitchen, Deputy Administrator, W.F.A., Washington, D. C.; Samuel Frazer, Secretary, International Apple Association, Rochester, New York; and the discussions were summarized by Fred A. Motz.

Election of Officers

Mr. Stanley Johnston, Superintendent, South Haven Experiment Station, South Haven, Michigan, was elected President of the A.P.S. to succeed Prof. T. J. Talbert who had served three years.

Stanley Johnston will bring able leadership and horticultural society experience to the A.P.S. For the past 20 years Mr. Johnston has been active in the affairs of the Michigan State Horticultural Society. During the past 10 years he has appeared on various A.P.S. convention programs and has served as a member of the Board of Managers of the A.P.S. during the past three years.

President T. J. Talbert has given the A.P.S. wise leadership and the society has made distinct progress in prestige and in objectives accomplished during his administration.

PLUMS

(Continued from page 11)

require cross pollination. The Japanese and European varieties do not pollinate each other. The Japanese varieties are generally self-unfruitful and more than one variety should be planted to provide for cross pollination. Self-fruitful European varieties include Stanley, Italian Prune, Reine Claude, and Sannois. French Damson is self-fruitful. Self-unfruitful European sorts include Washington, Jefferson, Pearl, Imperial Epineuse, and Grand Duke. The Minnesota varieties often have poor pollen and are uncertain pollinators of each other. Surprise, a native American plum, has good pollen and it should be included with varieties of the Minnesota group to pollinate them.

Site and Soil

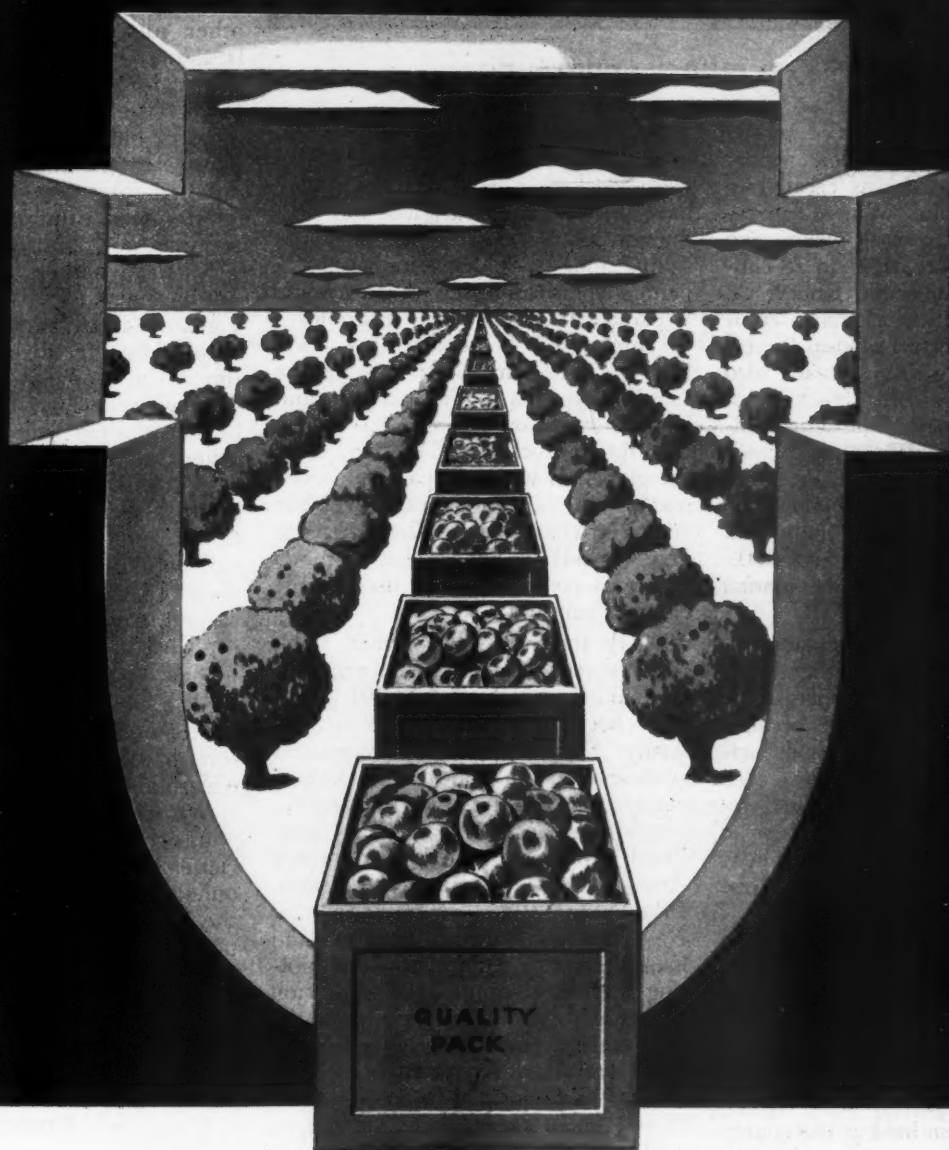
In selecting the site for the plum orchard, frosty pockets where air circulation is poor should be avoided. Spring frosts are more frequent and more severe on sites with poor air circulation. Winter temperatures, too, are often several degrees lower in these pockets than on adjoining slopes. Good air circulation influences the rate at which moisture dries off the fruits, which is an important factor in brown rot control.

Plums are generally thought to prefer clay or clay loam soils, although they may be grown successfully on lighter types, especially if they are reasonably fertile and well-supplied with organic matter. Light droughty soils are not suitable for plums. Good drainage and adequate aeration of the soil are as necessary for plum trees as for the other fruits.

Fertilizing

No definite rules may be laid down for fertilizing plum trees. The nutritional requirements of this fruit have received scant attention from experimenters, hence any recommendations that can be made are only tentative. It is reasonable to assume that plum trees will most likely respond to applications of a nitrogenous material. Young trees in a fertile soil that are being cultivated may not need supplementary nitrogen, but as the trees come into bearing or as a sod is established, it may be necessary to apply fertilizers to maintain the trees in a vigorous condition. Trees up to 3 years of age, if of average vigor, should receive up to ½ pound of nitrate of soda

(Continued on page 26)



Helping to bring the crops through . . .

The consistent high quality of Orchard Brand materials and their reliable performance in the field . . . *plus* the service involved in getting these materials to growers uninterrupted even under present day conditions . . . have helped bring through the crops in

1944 as in the past. This is just one of the reasons why Orchard Brand is a leading choice of commercial growers everywhere, *year in and year out* . . . *A good reason why Orchard Brand will again top the list on so many spray programs for the growing season ahead!*



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SURPLUS PROPERTY

BOARD MEMBERS APPROVED

BY the Surplus Property Act of 1944, effective October 3, 1944, a Surplus Property Board was created to succeed the Surplus War Property Administration. Several weeks ago the Senate by a vote of 41 to 28 confirmed former Governor Robert A. Hurley of Connecticut as chairman of the Surplus Property Disposal Board. Shortly afterward, the Senate also confirmed Lieut. Col. Heller as a member of the board. The action followed a two-day debate, in which Republicans attacked both nominations on the ground that the men lacked experience for the huge task of disposing of more than \$100,000,000 worth of surplus goods, plants, machinery and land.

No longer will it be necessary for persons to contact each of the eleven regions of the country to determine what surpluses are available because information on available goods nationwide will be listed by each Regional Office in a "Surplus Reporter," a publication which is to be issued from each regional office at regular intervals. This will advise firms on the Treasury's mailing list, of which the AMERICAN FRUIT GROWER is one, what the Treasury has to sell, the area in which the material is located and the general method which will be used to sell it. See the October issue AMERICAN FRUIT GROWER for regional listings.

A recent auction held at the county fairgrounds of Grundy County, Illinois, brought the more than 1,000 farmers that attended it a supply of shovels, ladders, boots, wheelbarrows, grindstones, hammers, chain hoists, etc. These items are only a very small portion of the surplus war goods that will flood the U.S. when the war in Europe is over. Farmers, however, have found these sales a godsend, for available supplies of farm equipment have been decreasing during the past two years. When compared with the huge amounts of bombers, ships and war plants these boots, hammers and shovels are but a small drop of the estimated \$100,000,000 surplus disposal question that faces the new three-man Surplus Properties Board.

The Defense Plant Corporation, which owns about 1,000 Government-built plants, costing some \$6.8 billion to build, recently informed the Mead Committee that no war plant can be sold today because it may be needed

tomorrow to produce some critical item. Some weeks ago, several plants were declared "surplus," but they have since been put back into war production. DPC is anxious to do its selling job, since delay in naming a plant surplus can lessen its sales value. A plant with an uncertain future loses its employees. To remedy this, DPC now has more than 70 plants up for sale or lease on a conditional basis and has 125 more on which it has issued descriptive brochures. DPC will lease the plants, in whole or part, and even make loans big enough to cover the entire purchase price. The plan is to give "liberal" credit so that as many plants as possible will be used in the postwar period.

As of the first of December, 1944, 6,239 surplus planes have been sold and paid for. A total of 23,391 planes have been declared surplus by the Army, Navy and other Government agencies. Of the total sold, the largest portion were light civilian-type planes requisitioned from their owners after Pearl Harbor for use in preliminary Army and Navy training programs. In addition, 911 former Army and Navy planes, largely trainers and liaison planes used for artillery spotting and short-range communication flights were sold. Not included in the total were twenty twin-engined transport aircraft very recently declared surplus and allocated to domestic airlines. All of these planes have been sold by the Reconstruction Finance Corporation, which is the disposal agency for surplus aircraft in this country.

The War Department continues to be the largest source of surplus war property. Before this property is reported to the disposal agencies, it is screened for possible uses within the War Department and by the Navy. When no use is found for such property in either agency, the property will then be declared as surplus to the appropriate disposal agencies. The Navy, Maritime Commission and other owning agencies so far account for only a fraction of the total declarations made to the disposal agencies. In the five months since June 1, surplus war property disposed of by disposal agencies amounted to \$111,779,000 at 71.1 percent of cost or appraised value, which compares with total acquisitions of \$746,835,000 during the same period.

PLUMS

(Continued from page 24)

annually, or its equivalent in some other nitrogenous material. Weak trees may have this amount doubled. Trees 3-5 years of age should receive $\frac{1}{2}$ to 2 pounds while trees over 5 years old may need from 2 to 4 pounds each year, the amount being doubled for trees low in vigor. The grower must study his trees and determine for himself through observation whether their growth and productivity is satisfactory. Over-vigorous trees may be checked by withholding fertilizer and by sowing the cover crop earlier. Before fertilizing trees low in vigor, it must be determined that some condition other than a shortage of nutrients is responsible for poor growth. Diseases, insects, poor soil, high water table, and root injury from deep cultivation, are possible causes of poor growth which must be corrected if fertilizers are to be used efficiently.

Some orchards have been discovered in which the trees are suffering from potash deficiency. The symptom of this trouble is a tip and marginal scorching of the leaves which gives them a bedraggled and wind-whipped appearance. Some varieties show these symptoms much quicker than others. Prune types in the station orchard seem to be especially susceptible to this trouble. Growers of plums who suspect that their trees are suffering from potash deficiency should consult their state experiment station for specific advice.

Pruning

The modified leader system that has proved so satisfactory with the other tree fruits is a suitable method of training for the plum. The vase-shaped tree is structurally weak and many broken crotches result from heavy crops with this type of tree. In forming the head at planting time, 3 or 4 branches facing in different directions and at least 6 inches apart are left to form the head. Thereafter pruning should be rather light and correctional in nature. It should always be kept in mind that strong crotches are very essential in a plum tree to support the heavy crops borne by many varieties. Otherwise, the trees will soon be ruined by excessive breakage of limbs. The trees should be kept rather open and should not be allowed to become too dense to facilitate spraying for brown rot. Light thinning of twiggy

(Continued on page 41)



*His war job...
"dishing it out"*

Why The "Service" Industries spell Opportunity for Service Men

Fighting men need service . . . hot chow, laundry, haircuts, shoe repairs. To give it, many a man is fighting the war with a soup ladle, a pair of clippers or a shoemaker's awl.

Tomorrow these front line service men will expect good jobs back home. And America's "Service" Industries can provide them. Here's why there will be opportunities to go into business and for jobs ranging from counterman to plumber, from filling station attendant to hotel chef:

Before the war millions were employed as restaurant workers, elevator operators, radio repairmen, bus drivers and in countless other service roles.

After the war, fighting men—as well as those who have gone without on the home front—will again want the "service with a smile" that America is famous for.

Today, hundreds of businesses, large and small—from "beaneries" to laundries and cleaning plants—which have had to curtail their services to the public because of shortages in manpower and materials, are already planning to expand their activities and increase their staffs.

Cut More Wood to Cut the Paper Shortage

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"service with a smile!"*



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In pre-war days Nickel brought a welcome gleam to practically every service industry.

Either by itself or in partnership with other metals it put lasting beauty in your favorite restaurant, the flash in your barber's scissors, spotless efficiency in your hospital.

These days Nickel is helping make home front service equipment see us through—just as, in front line materiel, Nickel aids in fighting off the stress, shock and rust of war.

Before long, this versatile metal will turn again to its peacetime purpose of improving the products that serve men and provide jobs. Hand in hand with other metals Nickel will help men rebuild a war-torn world, supply needed kitchens and cars, busses, trains and telephones.

Meanwhile manufacturers with metal problems are invited to consult Nickel's technical staff.

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CLEAN FRUIT

(Continued from page 12)

Mr. Dietsch's orchard received the regular schedule of 8 sprays as recommended by the Spray Service. This included one spray for apple maggot which in past years appeared on one or two varieties. Two sprays of liquid lime-sulfur were applied before the bloom, and in the after-bloom applications wettable sulfur was used as a fungicide with lead arsenate, lime and zinc sulfate as recommended. The spraying program in this orchard was finished the last of July. The entire operation is carried out by one man, who rides the sprayer and from his seat on the sprayer guides the tractor, operating extension control rods with his feet. The orchard has 34 acres of bearing apple trees 14 to 24 years of age. This orchard tied with the Quick Fruit Farm orchard of Summit County as having the cleanest crop of fruit in Ohio during the fall of 1942. The fruit set was very light in 1943.

The orchard which stands in second position this year is that on the Peterloon Farm in Hamilton County near Montgomery. It is operated by the O'Pekasit Farms, Inc., and the foreman is Mark Bailey, who applied 11 complete sprays. Flotation sulfur was used entirely for scab control, and 5 cover sprays were applied for codling moth. One spray carried 3 quarts of summer oil per 100 gallons to kill codling moth eggs. No apples were found blemished by codling moth at the time of the check-up. All codling moth cover sprays carried lead arsenate, lime and zinc sulfate. This orchard scored 97.9 percent clean fruit in 1942, and 97.65 percent clean in 1943.

The orchard which stands third and which belongs to Ralph Ladd is also one we have heard from in other years. It was sixth in 1942, and fifth in 1943. This orchard scored higher this year than in any previous season and the finish of the fruit was the best of any of the orchards visited during our inspection trips. Mr. Ladd modifies his fungicide sprays in such a way as to protect the finish of Golden Delicious and other russet-susceptible varieties with the result that his fruit showed no spray blemishes that would detract from its appearance. He is assisted in his management by his sister. The two do all the spraying on this 35-acre hillside orchard, that suffered severely under 1944 drouth conditions which were present in that area. When rains finally came, the fruit sized remarkably well.

The Quick Fruit Farm Orchard near Peninsula, Summit County, remains among the "select group" where it has been since 1940. It held

first place in 1941, tied for first place in 1942, and was in seventh place in 1943. The orchard is owned by Ivan Quick. It is operated by his son Tom, and Mark Shanafelt, his efficient foreman.

The other orchards listed in the box accompanying this article are all testimony of expert management and the names of the owners are found high on the lists of previous years. R. L. Gilmore stood second in 1943. Emery Leow occupied second position in 1940, 1941 and 1942. Every one of the orchards in the first ten positions in 1944 were in that group one or more times in previous seasons. None of these orchards ever had a serious codling moth problem. All have been receiving a full schedule of sprays for that insect.

Frank Gibson of Sandusky County probably put up the most difficult fight in 1944 to reach a score above 98 percent clean fruit because his crop had been badly damaged by codling moth the year previous. He did this with frequent sprays carrying three types of insecticide. Mr. Gibson applied his sprays at intervals of 8 to 10 days, using combinations of lead arsenate, nicotine and oil and modifying the formula during the latter part of the season to fit the conditions. He applied 10 complete cover sprays against the codling moth. While Mr. Gibson's spray bill for his 25-acre orchard amounted to about \$2400.00, he feels that he was adequately paid for his outlay, having cleared his orchard of worms which will make it much easier to grow clean fruit next year.

Outstanding lessons learned during the spray season of 1944 were: (a) the need of timely and thorough coverage during the period between the delayed dormant and two weeks after bloom for apple scab control, and (b) carrying the program of codling moth control through to completion. The number of cover sprays required for each orchard is determined by the degree of moth infestation the orchard carries. The entomologists feel that 1944 was the worst year for codling moth since 1930. This explains why a few good orchardists slipped in controlling that pest if they failed to apply enough extra sprays. Some orchards re-enforced the lead arsenate sprays with nicotine and oil. A few

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NUT GROWERS NEWS

JAPANESE WALNUT and the HEARTNUT

THE Japanese walnut is one of the less important members of the walnut family. Although its relatives, the black and Persian (English) walnuts are of much greater economic importance, the Japanese walnut is worth having in a collection of nut trees and many specimens are scattered about the country.

The tree is rapid-growing, handsome, and eventually it attains a height of 50 feet. Its luxurious growth and its almost tropical appearance make the Japanese walnut worth planting as a street and park tree, or around farm buildings. It is not particular as to soils except that it should be well-drained. It will grow well on soils low in fertility. Usually it is raised from seeds and the resulting trees vary considerably in hardiness, some being injured by temperatures of -20° while others in the same planting have been uninjured. Occasionally late spring frosts injure the foliage.

The nuts are smaller with a smoother surface and thinner shell than black walnuts. The flavor is inferior to that of other walnuts and the butternut. In cracking quality the Japanese walnut is no better than the butternut.

The heartnut is a variant of the Japanese walnut and its name indicates its heart-shaped appearance which is its chief distinguishing characteristic. The shells, too, are much smoother than those of the Japanese walnut. The heartnut is superior in cracking quality and, for that reason alone, it is to be preferred when nut production is the chief reason for planting this species.

A third member of this group is the Manchurian walnut which closely resembles the American butternut.

These three types hybridize with each other and with the butternut. The hybrids grow very rapidly and make handsome shade trees, but like many other hybrids involving two species, they are rather unfruitful even though they bloom heavily. Since they are wind pollinated, it is somewhat of a gamble to plant seeds if other species of walnuts are nearby. In fact, amateurs often plant seeds of the heartnut, hoping to obtain more heartnut trees, and they are disappointed when the nuts fail to resemble the seed parent. In most cases it may be assumed that the butternut, or nearby Japanese walnuts, furnished the pollen. If more heartnut trees are desired, grafting or budding will be necessary.

No Japanese walnut varieties have been propagated but several heartnut varieties are known to have been introduced from time to time. Among them are Lancaster, Bates, Faust, Ritchie, Stranger, Walters, and Fodermaier. The latter, of Hudson Valley origin, is probably most readily obtained.—GEORGE L. SLATE, Sec'y Northern Nut Growers Assn., Geneva, New York.

VICTORY IS OUR BUSINESS

*and we know it's
YOUR BUSINESS
too!*



FAITH

From the first turning of the furrow until the final harvest, no man lives more by faith than he who tills the soil.

His faith is in the good earth and in the laws of nature—in the fruits of toil and in the promise of reward according to achievement.

We who are engaged in manufacture also have convictions upon which our policies are based.

As we face the peace—bringing with it obligations to the many who have sacrificed so much to gain it—we must turn to these unfailing guides on which Americans have so long depended:

Faith in America and in America's future—a future of expanding, useful productivity and even higher standards of living.

Faith in the rightness and benefits of individual freedom and individual enterprise.

Faith in the principle that there can be no rights without responsibilities—no privileges to enjoy without duties to perform.

Faith in work, as the forerunner of reward—in incentive, as the kindling spark of productive energy—in opportunity to serve a need, as the first requirement to provide a job.

Faith in the American way of doing things, by which each person, each organization, each industry, each business must take its place—and be granted that place—according to ability and capacity—in one great, coordinated, inter-gearred system of living, working and contributing to the national welfare.

Faith in America's progressive instinct and in the things which serve it—science, research, engineering, technical knowledge and skill.

Faith in the rights of great and small alike—and in the importance of all to a free, peaceful and productive nation.

We believe that with stout hearts and willing hands dedicated to these principles, America's future will inevitably bring *better things for more people.*

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Is it any wonder, then, that our fighting forces have already requested and received more than 450,000 GMC military vehicles ... that thousands more are going into Service each month!

In addition to being one of the largest producers of military vehicles, GMC is also building many commercial trucks for essential users. If you are eligible for a new truck, your GMC dealer will gladly help you fill out an application. Remember, too, that GMC is headquarters for the original, truck-saving Preventive Maintenance Service.



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VOLUME PRODUCER OF GMC ARMY TRUCKS AND AMPHIBIAN "DUCKS"

ELBERTA

(Continued from page 8)

the name of L. C. Plant lived and did business in Macon, Georgia. He was interested in fruit growing as well as in banking. Mr. Plant was a good friend of the Rumph family, living three miles east of Marshallville, a small town only about thirty-five miles southwest of Macon. At that time most people in Georgia produced their peach trees by planting peach pits (seeds) although nurseries were offering budded trees for sale. A representative of a Delaware nursery dropped in to see Mr. Plant at his bank at Macon and got him interested in trying some budded peach trees. Mr. Plant placed his order for a few trees of the Chinese Cling, Early Crawford, Late Crawford, Mixon Free, Stump the World, and Tellitson. This was only seven years after the introduction of the Chinese Cling to America in 1850 by Charles Downing.

Mr. Plant sent these trees to be planted by his good friend Colonel Lewis Rumph of Marshallville, Georgia. Mr. Rumph grew the trees in his family orchard and considered the fruit of the Chinese Cling especially choice. The blossoms of the Chinese Cling trees, being in a family orchard, were subject to natural pollination by the other varieties of peaches growing there. Mrs. Rumph, wife of Col. Rumph, saved seeds from a Chinese Cling tree and gave them to her grandson, Samuel H. Rumph, who planted the seeds on the Rumph farm in 1870. Of the several seedling trees he brought in to fruitage from this planting, one produced excellent fruit which was later named Elberta.

Samuel H. Rumph, who planted the Chinese Cling peach seed and grew the original Elberta tree, married Miss Elberta Moore, a very charming young woman, who as Mrs. Rumph entertained many friends. It so happened that she had a group of friends to spend the day just at a time when the fruit of this seedling peach tree was at its best. Samuel H. Rumph, Elberta's husband, brought some of the choice seedling peaches along with several other sorts into the house to be admired by his wife's friends. Mr. Rumph handed out the fruit from several different trees, and when he came to the most luscious of them all, he announced that it had no name, and suggested that Mrs. L. E.

(Continued on page 44)

DELICIOUS.

(Continued from page 9)

Sole right to propagate acquired by C. M. Stark, 1894. Introduced and disseminated as the Delicious Apple."

By 1922 it was estimated that the annual value of the Delicious crop was 12 million dollars. In 25 years nearly eighty million trees had been sold. No other apple has been so successful in capturing large sections of the markets as rapidly and successfully as did Delicious. Furthermore, its popularity, increased production, sale, and distribution have been maintained and increased generally throughout the country.

For the most part, the trees have been satisfactory producers. This has been particularly true in the Northwest and northern districts. The chief fault of the original Delicious, however, was that it did not develop an attractive (mostly red) color until the fruit was overripe.

This drawback was corrected through the finding and later introduction in 1923 of a true bud sport of the old Delicious. The new variety was named Starking Delicious. Fortunately, this sport developed 100 percent good red color while still in a crispy, juicy, hard-ripe condition and retained at the same time all the other outstanding qualities of the fruit and of the tree of the original variety.

This new Delicious all red color sport develops full red color in late August and early September and can be picked early enough to prevent overmaturity. Consequently, it is replacing the old variety. Delicious and its red color sports, particularly, are popular varieties. Their high quality, general approval, and demand on the markets may often aid the sale of other sorts. The Delicious is exacting, however, in its pruning, fertilizing, spraying, harvesting, and handling requirements. The apple keeps well in both cellar and cold storage. It is distinctive, attractive, has very tender flesh, is mild rich sub-acid in flavor, and the quality is very good to best.

• BOOKS •

PEST CONTROL IN THE HOME GARDEN, by Louis Pyenson, is a new book that gives lucid and helpful information on both garden and orchard pests. Excellent drawings help the reader to correctly appraise the different types of insect and their particular type of damage. Price \$2.00.



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NURSERY STOCK

(Continued from page 13)

another variation from a standard variety which was more than just a color change.

Next, Dr. J. K. Shaw and Lawrence Southwick of Massachusetts State College pointed at the McIntosh variety. They collected strains of McIntosh and propagated them on a rootstock material known as USDA 227. Most of these strains produced vigorous nursery trees, but, interestingly enough, one strain proved uncongenial and died. Here was a difference in the McIntosh variety which amounted to more than a minor color change.

Shaw and Southwick then called attention to the fact that K. D. Brase and the writer had reported the successful propagation of McIntosh on USDA 227 in 1929, but had reported uncongeniality of McIntosh on the same rootstock on three other occasions. They suggested that two different strains of McIntosh might be involved. Accordingly, the two sources of McIntosh budwood were traced, and rootstocks of USDA 227 were budded with budwood taken from the two sources. The forecast proved correct; for the budwood from one source was uncongenial, and the trees died, whereas the budwood from the other source produced vigorous orchard trees.

How to explain these facts? What do they mean?

There are two thoughts that come at once to mind. First, if additional propagation tests prove that there are distinct strains of the McIntosh variety, then one of them is the true McIntosh and the others are not. That is, just as the Starking, which is a bud sport of Delicious, is a distinct variety, so are any variations from any true variety. Because, it must be remembered, fruit "varieties" are really more than "varieties,"—they are what are called "clones." That is, they are propagated not from seed as are varieties of vegetables, but by budding and grafting with wood of the "variety," so that all individuals are identical in genetic make-up. And so, it may be that careful examination and testing will find and separate the true McIntosh from any mixture that may exist.

The second thought is that the behavior of the budwood from different trees of McIntosh may be due not to bud sports or changes in somatic tissues, but to some unknown disease or physiological trouble which is transmitted in the propagation and which shows up only when united

with certain plant material, such as USDA 227. It may be likened to a virus which is masked or which for all practical purposes does not affect the performance of the trees, but it is recognized when placed in contact with certain rootstocks. The stockscion test may be thought of as a test for hidden infection. Trials now under way should establish these facts in due time.

So much for the apple. The same situation exists in other fruits, only perhaps to a greater degree with some. The citrus industry, for example, would not be on its present high plane without the bud selection work of A. D. Shamel of California. No such great variations have yet been shown in apples, pears, peaches, cherries and plums as have been shown in citrus. Nevertheless, there are important facts being unearthed in the stone fruits that merit watching. Director V. R. Gardner of the Michigan State College has shown some striking variations in the sour cherry. The entire problem of virus troubles in cherries, plums and peaches is receiving close study.

But, how important are these findings in terms of fruit production? How do they affect the nurseryman? How do they affect the fruit grower?

First of all, there can be no doubt that some color sports of some standard varieties are more than mere color changes. Secondly, there can be no doubt that there are differences in the performance of budwood taken from trees of purportedly the same variety. Some of the changes are admittedly of exceedingly minor nature; after all, most leading varieties of deciduous fruits have been grown for a great many years with no changes so profound as to seriously affect the fruit industry. Yet, as horticulture advances and competition demands greater discrimination, some of the matters which may have been considered minor in the past may come to be termed major in the future. Again, many of the differences that have been observed have been in the direction of the undesirable, such as disease troubles, so that the problem in many cases consists only in discarding the undesirable and in maintaining the original standard.

In the final analysis, it must be admitted that there really is something to the general idea of "pedigreed" or "certified" nursery stock in the sense that the terms imply weeding out the undesirable and maintaining the standard of the variety, at least. Only, instead of the expression being confined solely to bud sports, strains, or genetic differences, as it has been in the past, it might well be broadened

(Continued on page 40)

What to Look for in a Tractor for Fruit



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Creep Travel for Spraying. Case tractors can be operated, in low gear, slowly along the tree rows for non-stop spraying. Three other forward gears give best speeds for plowing, tillage, hauling. Power take-off is located in the middle, above the drawbar. It never need be removed, never exposes gear-case and lubricant to entry of dirt.



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OTTAWA MFG. CO., 132 Pine St., Ottawa, Kansas.

"ON THE LIPS OF GROWERS"

(Continued from page 15)

is not a hundred percent efficient, consequently more fruits develop than should. But, experimental data indicate that the method is far better than no thinning at all, though at times perhaps not quite as effective on the current years crop as hand thinning.

The use of these sprays on some extremely biennial trees have had some very favorable effects upon reducing this biennial tendency. The material most commonly used is the sodium salt of di-nitro-cresol, which is an organic material sold under the trade name of *Elgetol*. The amount used varies with the variety, some requiring only ½ pint per 100 gallons of water, others 1½ pints per 100 gallons and others, as vigorous Wealthy and Baldwin, 1 quart in the same amount of water.

Dr. Magness reported the use of a tar-oil-distillate spray being used for fruit thinning in the Hood River Valley. Alternate bearing trees that normally bear 30 bushels every other year, bore from 18 to 20 bushels every year when sprayed with this material in the "on year."

A number of growers reported fair success with the use of these sprays as well as with the so-called harvest sprays, or stop-drop sprays. Increasing interest on the part of fruit growers will prompt further experimentation and trials of these new types of spray materials. Indications are that blossom thinning sprays may be practical with peaches as well as apples.

I. W. Wander of the Ohio Agri-

cultural Experiment Station's Department of Horticulture stressed the use of mulch in the orchard culture system. Mulch, growers learned from this soil specialist, serves two purposes in the orchard. It conserves moisture and is an excellent source of fertilizer elements, particularly potassium. Thus it becomes important to use for mulch, material that has not weathered in thin layers in the field for long. Fresh material is much higher in available potassium. The use of mulch seems to increase the amount of available potassium in the soil. When potassium fertilizer is applied to mulch, there results a higher amount of available potassium in the soil than when the fertilizer is applied to soil lacking mulch.

It was the mulch system of soil management that spelled success for C. D. Blubaugh, an outstanding Ohio fruit grower who attended the school and related his experiences. The land was poor, rough and termed unsuited for agriculture. But not for Mr. Blubaugh. Through careful planting, proper fertilization plus the mulch system of soil management, he brought a young orchard into a high state of productivity on land that had previously been considered unfit for any good purpose.

W. R. O'Brien of the Soil Conservation Service, Benton Harbor, Michigan, brought to the growers the latest on contour planting of orchards and small fruits. Of interest to them were the development by implement

(Continued on page 36)

Page 34 AMERICAN FRUIT GROWER, January, 1941



R. S. Herrick, right, Des Moines, Iowa, receives from B. S. Pickett, Head of the Department of Horticulture, Iowa State College, Ames, a watch and chain, presented at the Iowa State Horticultural Society's Annual Meeting. Mr. Herrick has been Secretary of that Society for 25 years. Right is Dr. Niels E. Hansen, of Brookings, South Dakota, with Professor Pickett. Dr. Hansen was awarded the State Horticultural Medal for his outstanding work in fruit breeding.



FRUIT REVIEW

(Continued from page 16)

Citrus

United States' production of oranges from the 1944-45 crop (excluding tangerines and California Valencias) is expected to be 66,030,000 boxes. Comparable production was 72,161,000 boxes for the 1943-44 crop and 55,061,000 boxes for the 1942-43 crop. In Florida and California, 39,220,000 boxes of early and midseason oranges are now in prospect for the 1944-45 season compared with 46,871,000 boxes produced last season. Indicated grapefruit production for the 1944-45 season (excluding the California summer crop) is 45,666,000 boxes. Comparable production was 54,029,000 boxes in 1943-44 and 48,664,000 boxes in 1942-43.

Mainly because of new plantings, increased bearing capacity of planted trees, and good orchard care, the production of citrus fruits and tree nuts has increased rapidly during the past decade. Further increases in production, particularly of citrus fruits are likely, according to USDA.

In the early post-war years, a broadening of markets and uses of fruits and nuts will be required, because the fruit industry will face a condition of greatly reduced Government requirements and smaller civilian demand. A resumption of exports of apples and pears should be possible, but at the same time there will be an increase in competition for the consumer's dollar by increased imports of bananas and other fruits. The fruit grower, however, can look forward to the processing of an increasing proportion of the fruit crop, when materials and equipment should be available to can and freeze. If this can be done at a lower cost per unit of product, new market outlets, as well as old ones, should be reached throughout all seasons of the year.

• NEW BULLETINS •

KANSAS State Agricultural Experiment Station, Manhattan, Kansas, recently published three bulletins of interest to the fruit grower: **PRESERVING FOODS IN FROZEN FOOD LOCKERS**, Circular 217, by G. A. Filing and D. L. Mackintosh, **PRUNING FRUIT TREES IN KANSAS**, Circular 218, by R. J. Barnett and G. A. Filing, and **APPLE GUIDE FOR KANSAS RETAILERS**, Circular 219, by R. J. Barnett.



**Bill Peterson
BANDED!**

the climbers nearly broke his neighbors

Bill knew that infestations of the tree-climbing insects that devour foliage and buds often occur in unexpected places. He knew, too, that many of them simply can't be controlled with sprays. So he took the relatively inexpensive precaution of banding his trees and vines with **TREE TANGLEFOOT**, the barrier that stops **ALL** tree-climbing insects cold. His neighbors figured they just didn't need it.

The climbers came. Bill had a bumper crop in spite of them. His neighbors suffered near-disaster.

Don't take a chance on losing your next season's crop. Band **NOW** before the adult insects emerge from the ground, climb the trees and lay their eggs. And be sure to use genuine **Tree Tanglefoot**. The effectiveness of its formula has never been approached. It's easy to apply and one application remains effective for months. For sale at your hardware or seed merchant.

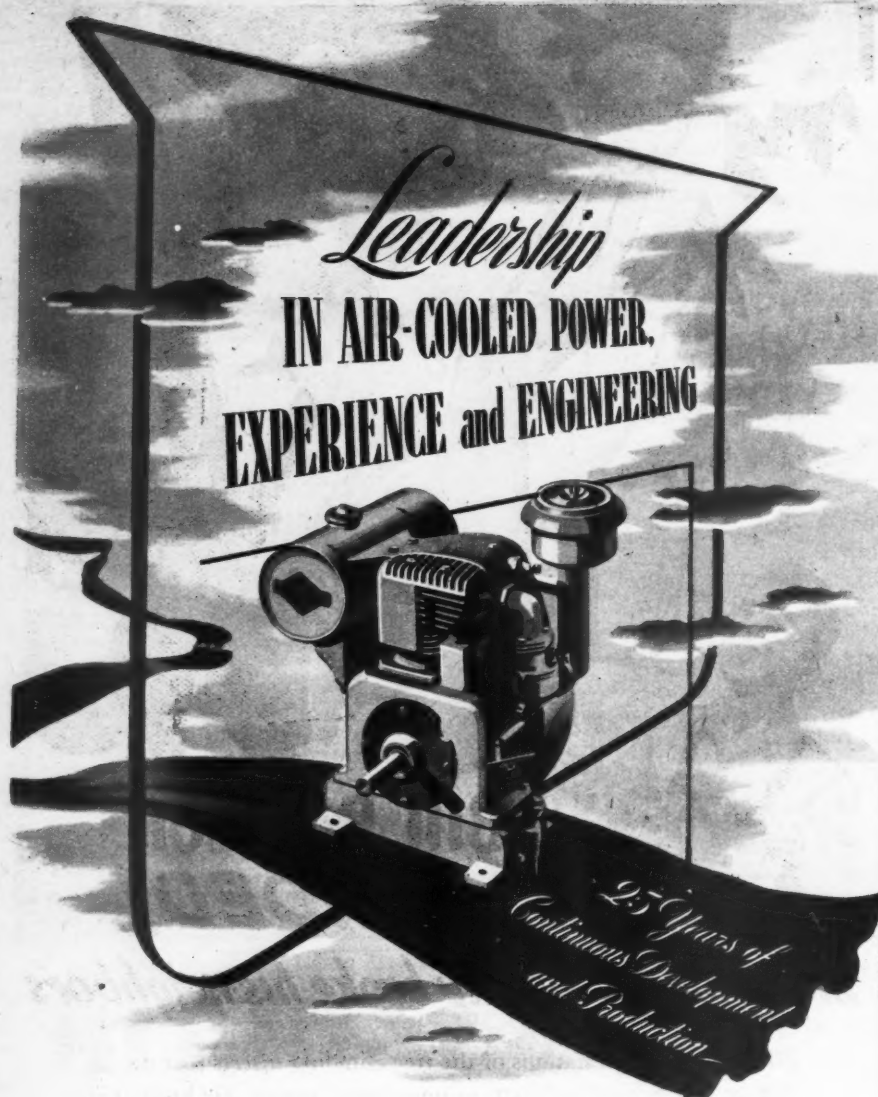
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FRUIT SCHOOL

(Continued from page 34)

companies of disc harrows that can be angled or straightened simply by pulling a trip without ever stopping the tractor. This speeds up orchard operations in contour plantings where it is necessary to jump certain sod areas in cultivation. It also has applications to other types of orchard culture.

The problem of stocks, particularly dwarfing stocks, received a thorough going over. Dr. Freeman S. Howlett is in charge of research with stocks at the Ohio Agriculture Experiment Station and he extended to the growers the latest information on the subject. Dr. Howlett pointed out that it is impossible to determine in any way whether a particular type of stock is dwarfing or not until a given variety has been grafted or budded onto that stock and has been grown for a number of years.

The Malling stocks are the chief dwarfing stocks now used for apple trees. Not all the Malling stocks are dwarfing; some are very dwarfing, others only moderately so and still others give standard-size trees with certain varieties. Malling I, II, VII and IX are the most dwarfing. Malling XII and XIII are vigorous and produce standard trees with most varieties.

Growers were interested in these dwarfing stocks from the standpoint of semi-dwarf rather than very dwarf trees. By planting smaller trees they figured that more could be planted per acre, the cost of caring for them would be less than for large trees, they would come into bearing from 2 to 4 years earlier and in general might increase efficiency in orchard operations, thereby increasing returns per acre. In airing this problem with the scientists the growers learned that little is yet known about most of these stocks and their relationship to commercial varieties. Hence, the conclusion is that dwarfing stocks must remain on the trial list for commercial planting. For home or back-yard plantings they do have a more prominent place.

Dr. Howlett further pointed out that incompatibility between the stock and scion variety may be delayed for as long as 10 years. The dwarfing effects of some of the stocks may be due to this delayed incompatibility effect. It is important to bud or graft the scion variety high enough on the dwarfing stock so the scion variety will not root. If scion rooting takes place, the dwarfing effect of the stock will be offset. Considerable attention

was given the practice of using Virginia and Hibernia crab species as intermediate stocks on which commercial varieties are grafted. These crab species are hardy and in some instances produce a good framework upon which varieties can be grafted.

Pear varieties grafted on intermediate stocks of Old Home variety show marked resistance to fire blight. This gave Ohio Bartlett pear growers a little hope of continuing their plantings, since this outstanding variety is very susceptible to blight epidemics. Growers were urged to plant only Bartlett trees which were grafted upon Old Home intermediate stock. Some eastern and western nurseries handle such trees.

Pruning, the age-old orchard practice, was brought up for discussion in light of present trends. Growers were of the opinion that trees permitted to grow to heights in excess of 20 feet were too high for best economy. The trend in pruning mature trees is, therefore, to keep them within 20 feet in height and well spread out, the lateral spread of the tree depending upon the planting distance. Bulk cuts should be used in the center of the tree if necessary to open them up and the lower branches should be thinned out to keep the amount of poorly colored and off-size fruit at a minimum. A medium amount of detailed pruning to facilitate thinning of the fruit was also advocated. The tree, growers were told, is the best guide in pruning.

The principles of peach pruning were of vital interest to peach producers. The practice of deshooking early in the spring as the new shoots develop seems a good way to select those branches that are to be left for main fruiting wood. Emphasis was placed upon keeping the trees open in order that good renewal growth could be had each year. Some heading back was recommended to keep limbs sturdy and stocky and to encourage renewal growth of fruiting wood. When peach trees reach the age of about 8 years, they should begin to be headed back in order to produce a low-headed tree.

In pruning sweet cherry trees, fruit growers learned that they should prune in order to get a maximum of fruiting spurs on 2-year wood. Buds produced on these spurs are harder than are buds produced singly. A point to keep in mind in pruning the young sour cherry tree is a good radial spacing of the main branches about the trunk or main scaffold. Cherry trees are trained in much the same way as apple trees, by the modified central leader system.

Laboratory periods were spent in
(Continued on page 38)

KOPPERS FLOTATION, MICRO-FLOTOX, SULPHURS



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There is a combination of these sulphurs and spreader adhesives that will do the job of covering your trees against fungus diseases, such as, Apple Scab, Peach Scab and Brown Rot. ORTHO fieldmen will plan your program and guide you through the year's spray work.



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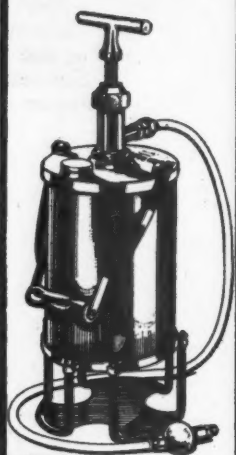
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NEW WAX EMULSION

A NEW three-purpose oil-wax emulsion orchard spray that will serve to thin blossoms on fruit trees without hand labor, reduce leaf water loss to maintain production through dry periods, and provide a spreader and sticker for ordinary insecticides and fungicides, has been developed by Michigan State College, according to V. R. Gardner.

Director of the College Agricultural Experiment Station.

Preliminary experiments indicate that the new spray not only holds promise for these three uses, but may even have other values. However, it is emphasized that extended trials are yet necessary before the place of this material in horticultural practice is established.

FRUIT SCHOOL

(Continued from page 37)

learning to identify various insect and disease injuries to fruits and trees, in becoming acquainted with fruit storage problems and in pruning exercises. Of paramount interest were the facts growers picked up concerning certain storage disorders of fruit and their control together with prevention of mechanical injury of fruit. A surprisingly large amount of fruit is lost from the number one class or grade each year on account of these causes. Many can be prevented.

The experimental work with air-conditioned apple storages and waxing treatments to prevent storage scald was reviewed by Dr. A. Van Doren. By circulating the storage atmosphere through charcoal impregnated with bromine, an excellent control of storage scald has been obtained on an experimental basis. It may have possibilities of commercial applications. The use of certain vegetable waxes, particularly the Brytene Wax has proved of value in reducing storage scald on apples. It also greatly reduces the amount of moisture loss from fruit, a prime factor in length of storage.

The variety picture has not changed much during the past few years. According to Dr. W. P. Judkins, Assistant Horticulturist at the Ohio Agriculture Experiment Station, Golden Jubilee is still the best early peach variety for local plantings in Ohio. Halehaven is rapidly pushing out in front as a leading variety for the Elberta season or slightly earlier. Cumberland and Belle of Georgia are yet the leading white varieties.

Premier (Howard 17) and Catskill are the two outstanding strawberries for Ohio, and Latham, Newburg and Marcy are three good red raspberry varieties. Cumberland is the standard black raspberry variety grown in Ohio with considerable new plantings being made to the New Logan variety.

Water is of great interest to fruit growers in many respects. Dr. J. H. Gourley brought to the group some unusual figures relating to rainfall and water supply of the state. The average rainfall for Ohio is 39.97 inches per year. Of the total amount of rain that falls on the state each year, 8,282,500,974 gallons run off. This is equivalent to 313,632 gallons per acre, a fact which set growers to thinking about Ohio's erosion problem.

When the fruit growers of the nation still think it important to get together for the benefit of their industry, there need be no fear for the safety of that industry.

BACK TO SCHOOL

(Continued from page 15)

discussed the newer peach varieties. Dr. F. S. Howlett, member of the college faculty and also associate at the station, presented in class a dissertation on the present situation with dwarfing and understocks for apples and on the training of young apple trees. Mr. F. H. Beach, Extension Horticulturist, spoke on modern orchard equipment and Dr. A. Van Doren, a new member of the faculty and station, talked about the results of blossom thinning and about harvest sprays in New York and about the mechanical handling of fruit. There were other interesting classes, too numerous to mention here.

Now my weakness, as far as fruit growing is concerned, is in recognizing insect injuries and diseases. So naturally, it was Professor T. H. Parks' class on "Injurious insects and their identification," along with Professor W. G. Stover's discussion on "Fruit diseases and how to know them," that interested me the most.

In the beginning I did not know that I was going to have to take a test on which I would be graded. As it was, I sat and listened to both discussions and thought, here I'm really learning something about those darn little pests and diseases. After the discussions we were asked to examine some specimens that were injured or diseased, to examine them carefully so that we'd recognize them the next time we saw them.

Then we were led to another assortment of specimens that were infested with the same injurious diseases and we were told to individually identify them, putting our answers on a piece of paper. Well, there's a catch in this identification business. You see a disease injury on a big twig looks differently than it does on a small twig, so it's no cinch, making correct identification.

When we all were finished, papers were graded and it was announced that one fruit grower had 28 out of the 30 identifications made correctly, and that wasn't me. There wasn't much bragging of grades among ourselves although we were told that, as a whole, we were pretty good and, anyhow, I got my "diploma" along with the others.

This is the first time in the 16 years of the Ohio State Fruit School that certificates were issued. On the last day of the school Dr. J. F. Cunningham, Dean of the College of Agriculture, addressed the class and presented each member with a cer-

(Continued on page 41)

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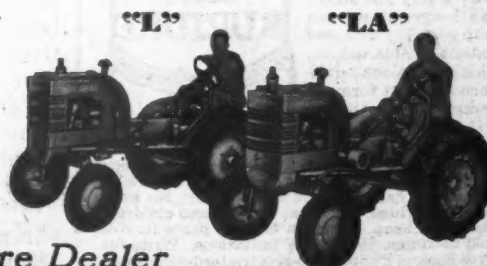
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CLEAN FRUIT

(Continued from page 28)

saved much of their crop because they applied an extra spray or two in August when the second brood of codling moth larvae was busy entering the fruits.

The location of the 21 test orchards which rated above 98 percent clean fruit is not confined to any one section of Ohio. They are found scattered over 14 counties. Seven are located in southern Ohio, one in east-central, eight in northeastern, and five in northwestern Ohio.

The spray materials used in attaining these results testify to the standardization of insecticides and fungicides and do not lend support to the charge sometimes made that faulty materials are to blame for lack of control of fruit pests. Timeliness, thoroughness and the right materials applied at the critical time, produced the high-quality fruit which was grown in these orchards. These growers are alert to adapt recommendations to their conditions, and to let nothing stand in the way of spraying when the time is at hand. It is fruit of this quality that gives Ohio the name it deserves in the field of apple production.

NURSERY STOCK

(Continued from page 33)

to include freedom from disease, good quality and all-around superior and reliable performance. If to this certification for trueness-to-name of the scion and also of the rootstock is added, the expression takes on even greater meaning.

All of this being so, it would seem good precaution for nurserymen to be even more vigilant than they now are in the source of their propagation stock. Giving due credit to nurserymen, it should be pointed out that many of them have been doing this for some time. Not content to wait until science proved or disproved the contention that there were "strains" in varieties and differences in budwood, they have been acting on suspicion and conviction and they have been taking budwood from certain trees and certain orchards which they have considered superior. In this way, the fruit grower has been perhaps unknowingly protected by the vigilance of alert nurserymen.

HUNTS ACME GRAFTING COMPOUND, Used for grafting or as a protective coating.
RODENT REPELLENT, Protect your trees against rabbits and other rodents.
PARADICHLOROBENZINE, kills peach tree borers. Also brush and hand grafting wax. Send for price list.
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Our 1944 Trials—35 varieties of tomatoes proved Victory Tomato earliest of All. Ripen tomatoes red, thick, solid, in 40 days from plants. We are introducing it in every State. Try it. 40 SEEDS Free for Trial. Send Address on Post Card Now. 1945 SEED BOOK Free. Vegetable & Flower Seeds. See Page 2. New Flower Free Trial. **MILLS SEED HOUSE Box A ROSE HILL, N.Y.**

\$1 GARDEN SEEDS FREE

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CASH PRIZE CONTEST

Send for FREE Garden Book giving full details about CASH PRIZES to growers of this wonderful tomato.

BURGESS SEED & PLANT CO.
234 C.T., GALESBURG, ILL.

BACK TO SCHOOL

(Continued from page 39)

tificate with the fruit grower's name on it. I walked up and accepted mine, like the rest, and nothing was mentioned about my grade in the disease injury test.

Later I proudly displayed "my diploma" to Dr. Joseph H. Gourley, Chief of Department of Horticulture, who is responsible for the Ohio State Fruit School. This fruit school is his idea and every Ohio fruit grower is welcomed to attend. As far as I know, there isn't another school like it. It is amazing how here the State University opens its doors to any fruit grower and offers to him an opportunity to study his own business, all for just the charge of \$2 which is a laboratory fee. If more fruit growers would come to this school, year after year, why we Ohio fruit growers, as a group, could become the best-versed fruit growers in the United States with thanks to our own State College.

But I did come away from school wishfully. You see, at the beginning of Professor Stover's class he said, "This course on fruit diseases usually takes two periods of 12 weeks each, but I am going to give it to you fruit growers in 24 minutes." And he did. His discussion was concise, informative, and illuminating. In fact, I wish I could absorb facts about fruit growing in the same way, in a matter of minutes instead of years.

PLUMS

(Continued from page 26)

varieties and the removal of strong growing watersprouts will be all the pruning needed with young trees. The Scaffold branches and the laterals developing from them should be well-maintained. Heavy pruning is a dwarfing process, tends to delay fruit bearing and ordinarily has no place in an eastern plum orchard.

Trees of bearing age will need only light pruning. With spreading sorts, like Burbank, an attempt should be made to direct the growth upward. With upright varieties the growth should be directed outward.

Thinning

Thinning the crop of plum varieties which tend to overload undoubtedly is beneficial to the tree and fruit. Whether it is profitable depends on the price received for the larger plums and on the reduction in brown rot which spreads more rapidly when the fruits touch each other.



[A simplified Annual Report of the American Railroads
in their third year at war]

IN 1944, the railroads rendered to the American public the greatest volume of service ever performed by any agency of transportation.

For doing this job, they received about 9½ billion dollars. That's a lot of money—but most of it was earned by hauling tremendous tonnages of freight for less than one cent per ton per mile and carrying passengers for even less than before the first World War.

Out of every dollar the railroads received—

38¢ was paid out in pay rolls.

29¢ was paid for materials and

supplies of all sorts and other operating expenses.

19¢ was paid in taxes—federal, state and local.

7¢ was paid in interest, rents and other charges—a great share of which went to insurance companies, savings banks, endowed institutions.

2¢ was paid in dividends to stockholders.

5¢ was left over in "change" to cover all such things as restoring roadways and equipment after the war, paying off debts, and providing reserves for the improvement of plant and the modernization of service necessary to keep pace with American progress.



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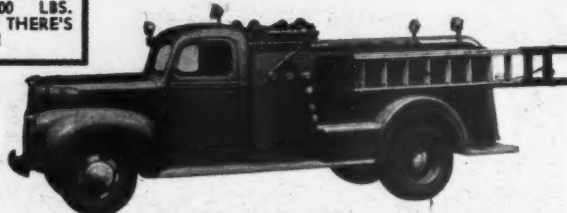
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WASHINGTON MEETING

(Continued from page 18)

peach growing in the Midwest. He pointed out that in some of the mid-west states, particularly in Michigan, plantings enough to greatly increase the tonnage have already been made. The fact that many of these plantings are one of several crops being produced by farmers complicates the food outlook situation. Being somewhat less professional than the orchardist, and unable to devote his entire time to fruit production, the side-line grower frequently is willing to place an inferior product upon the market.

General Session

W. A. Luce, Associate County Agent, Yakima, and Dr. R. L. Lindner, led an interesting discussion about the use of zinc in orchards. Mr. Luce pointed out that approximately half of the cherry trees in Yakima district are suffering either seriously or mildly from zinc deficiency. He also stated that many pear and apple orchards should be treated with zinc. He suggested moderate spraying of severely infested trees with a dormant application of zinc sulphate at the rate of 25 to 50 pounds per hundred gallons of water. This application should be made in late February or early March and the trees should be sprayed in much the same way that other dormant applications are made. For trees mildly infected he suggested a dormant application of zinc sulphate at the rate of 15 to 25 pounds per hundred gallons of water in late February or early March.

The matter of using airplanes in orchards was of special interest. Mr. Joe Scaman of Central Aircraft, Yakima, pointed out that the results obtained from applying hormone sprays to pears and apples during the past season were reasonably successful. He expects that the airplane will be used more and more in orchards.

Pear Section

Pear pruning was one of the important topics of the pear session. Art Enbom of Yakima discussed the pruning of mature Bartlett pear trees. An interesting slant brought out by Mr. Enbom was the matter of sizing up the orchard before starting to prune. He pointed out that by counting the leaf buds and the fruit buds on sample trees and pruning as much as necessary to allow fruit buds five to six inches apart and leaf buds an inch apart; better results are obtained

than by simply pruning blindly.

Warren Hayes of Yakima discussed pruning Anjou pear trees, stressing the importance of thinning the scaffold branches. Mr. Hayes thinks that a tree should have no more than three or four scaffold branches. Excessive scaffold branches make the trees grow taller and increase the height of the fruiting area. He also feels that it is difficult to maintain fruiting wood on the inside of a tree with five or six or more scaffolds. It was pointed out in this discussion that tree spacing is a very important part of the pruning operation. The first thing that should be done in many orchards is to remove the crowded trees, according to Mr. Hayes. The removal of crowded trees may be all of the pruning that is necessary in some orchards for one season.

Officers of the Washington State Horticultural Association for 1945 are: R. H. Parsons, Leavenworth, President; C. C. Aller, Yakima, First Vice-President; Harold Copple, Wenatchee, Second Vice-President; John C. Snyder, Pullman, Secretary-Treasurer.

REPORT

on

BEEKEEPERS MEETING

By A. N. PRATT

AT a meeting held in Nashville December 8, the Tennessee Beekeepers Association elected officers and adopted a program which should put the bee business on firmer footing. Mr. Armstrong Allen, Nashville, was elected President; Mr. George H. Rea, Nashville, Secretary-Treasurer; and Mr. R. W. Lane, Greeneville, Mr. H. L. McClain, Morriston, and Mrs. Irl Compton, Paris, were elected Vice Presidents from East, Middle and West Tennessee, respectively.

Mr. John M. Amos, Extension Specialist in Beekeeping at Pennsylvania State College was guest speaker. He cleared up many points about the importance of pollen stores in developing strong healthy colonies.

The importance of beekeeping in fruit production, especially in the light of the new developments in blossom thinning, was discussed. It was brought out that the value of bees in pollinating crimson clover far outweighed the cash return from honey and wax—ample pollination increased the seed yield 600 to 800 percent. Tennessee produced over 60 percent of the crimson clover seed in the United States in 1944, yet this year we harvested seed from only 33,000 acres, less than 12 percent of the planted acreage.



That well-groomed look in an orchard is the result of many little attentions thoroughly done. Often, these numerous items of orchard care must be slighted because the power available is either unsuited or not well adapted to handle them.

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LEADING CANADIAN INTRODUCTIONS IN SMALL fruit plants and vegetable seed. LOWDEN'S PLANTS & SEEDS, HAMILTON, ONTARIO.

GRAPES, NEW GOLDEN MUSCAT. 30 OTHER varieties. Berries, fruit, nut trees. Miller's Grape Book Free. MILLER NURSERIES, Box F, Naples, New York.

REGISTERED RASPBERRY PLANTS—FOR BETTER yields of quality berries. Sensational new Morrison black raspberry, Boysenberries, large cultivated blueberries, new Red Lake currants, Poorman gooseberries, dwarf fruits and hardy nut trees. True fall bearing cherries. Our ornamental fruits are dual-purpose plants for utility and landscape planting. Complete list of fruit trees and berry plants for home and commercial plantings. Catalog and cultural guide free. W. N. SCARFF'S Sons, Box 31, New Carlisle, Ohio.

PEACH AND APPLE TREES 9c AND UP. PEARS, plums, cherries, nuts, berries, grapevines 7c. Evergreens, shrubs, shade trees, low as 20c. Free catalog. TENNESSEE NURSERY CO., Box 203, Cleveland, Tennessee.

ORCHARD FOR SALE

144 ACRES CLAY SOIL—75 acres in leading varieties of apples and peaches. Apples 8-14-24 years. Peaches 3-5 years. Average yield past five years 13,000 bushels. Stationary spray system and fully equipped. Modern residence 9 rooms and bath. Hot air furnace with stoker. Electricity, 2 tenant houses. Located in Knox county, Indiana on through highway 50—3 miles east of Vincennes. If interested, come and see it. Bare land worth \$200 per acre. Price \$40,000. KNOX NURSERY & ORCHARD COMPANY, Route 1, Vincennes, Indiana.

PATENTS

NATIONAL TRADE MARK COMPANY, MUNSEY Building, Washington, D. C.

PHOTO FINISHING

ROLLS DEVELOPED—TWO BEAUTIFUL DOUBLE Weight Professional Enlargements, 8 Never Fade Deckle Edge Prints, 25c. CENTURY PHOTO SERVICE, La-Crosse, Wisconsin.

PLANTS FOR SALE

HYBRID WATERMELON SEED. MODERN MELON miracle. Sand unnecessary. Seed from 50 to 100 pound watermelons. Two luscious cantaloupes. Free booklet or \$1.00 for 700 seeds. AIRLINE FARMS, Clay Center, Kansas.

FREE—1945 GARDEN CATALOG, ILLUSTRATED in color, of hardy field-grown vegetable plants that produce crops three weeks earlier than home grown plants. Tells how to spray, plant and cultivate cabbage, onion, lettuce, beet, broccoli, tomato, potato, eggplant and pepper plants. Get your Catalog now before the supply is exhausted. F. D. FULWOOD COMPANY, Tifton, Georgia.

POULTRY MAGAZINES

YOUR GREATEST POULTRY PROBLEM WILL LOOK simple when you read American Poultry Journal regularly. 500,000 poultrymen do, why not you! Only 25c a year, 5 years \$1.00. AMERICAN POULTRY JOURNAL, 591 So. Clark, Chicago, Illinois.

POULTRY RAISERS—INCREASE POULTRY PROFITS with Experimental Farm advice. Latest tested helps. Subscribe now! Two years 50c; Five years \$1.00. POULTRY TRIBUNE, Dept. 24, Mount Morris, Illinois.

QUILT PIECES

QUILTING? SILK, COTTONS, VELVETS, WOOLENS. Samples free. RAINBOW, Decherd, Tennessee.

RABBITS

RAISE CHIN-CHINS, THE BIG MONEY-MAKING Rabbit. Big Demand. Small Investment. Ideal Business for Anybody, Anywhere. WILLOW FARM, R. 32, Sellersville, Penna.

SONGWRITERS

SONG POEMS—WANTED TO BE SET TO MUSIC. Send poem for immediate consideration. FIVE STAR MUSIC MASTERS, 716 Beacon Building, Boston 8, Mass.

TREE BANDS

SUREKILL TREATED TREE BANDS AVAILABLE for 1945. Orders being booked now. Write for prices. M. A. KOELLER, Barry, Illinois.

EARLY BIRD TREE BANDS CHEMICALLY TREATED. Kills the Codling Moth. Send orders early. EDWIN H. HOUSE, Saugatuck, Michigan.

USED AUTO PARTS

HAVING CAR TROUBLE? USED, GUARANTEED auto truck parts and money. Transmission specialists. Describe needs; immediate reply. VICTORY, 2439 AZ Gunnison, Chicago 25, Illinois.

WANTED, SPRAYER

WANTED: LARGE OR SMALL ORCHARD SPRAYER with motor or power take-off. GOLDEN TREE & LANDSCAPE SERVICE, Broadlands, Illinois.

WANTED—POWER SPRAYER, FRIEND NX MODEL or Iron Age 10 Gal. minute size. FRANK SKRELUNAS, Route 4, Williamson Road, Saginaw, Michigan.

WANTED

WANTED TO HEAR FROM OWNER OF FARM FOR sale for spring delivery. WM. HAWLEY, Baldwin, Wisconsin.

1,000 EGGS IN EVERY HEN

IF You Keep Chickens CUT THIS OUT

"The great trouble with the poultry business has always been that the laying life of the hen was too short," says Henry Trafford, nationally famous Poultry Expert, for nearly eighteen years Editor of "Poultry Success."

The average pullet may lay 150 eggs or more in second year may lay 100. Then she goes to market. Yet it has been definitely established that every pullet hatched has from 1,000 to 3,000 or more minute egg germs in her system—and may, in many instances, be made to lay on a highly profitable basis for as long as five years—if given proper care.

How to work to get up towards 1,000 eggs from hens instead of discarding them after one year of laying; how to keep up production from fewer birds, save on upkeep, cost of breeding, rearing and feeding expense, and so get more net profit from every dozen eggs. These and many other money-making poultry secrets are contained in Mr. Trafford's 1,000 EGG HEN PLAN of poultry raising, one copy of which will be sent free to any reader of this paper who keeps SIX hens or more. Eggs, this year, will be in great demand—at good prices—to take the place of rationed meat. Means real profit to the smart poultry keeper who can make birds produce. Mr. Trafford tells how. If you keep chickens and want them to pay with EXTRA EGGS, cut out this notice and mail with name and address to PENN POULTRY SERVICE, Suite 403, 333 North 15th St., Philadelphia (2) Pa., and free copy of the 1,000 EGG PLAN will be sent by return mail.

ELBERTA

(Continued from page 30)

Veal, one of the visitors, might name it. Mrs. Veal, it is said, promptly replied, "Let's name it for your wife, Elberta. She is perfect and so is the peach."

It may be of interest to note that Mr. Lewis A. Rumph, son of Col. Lewis Rumph, planted some seeds from the same Chinese Cling peach tree, from which the Elberta came, and produced the Georgia Belle, at one time a very widely planted white-fleshed freestone variety. The site of the original Elberta and Georgia Belle trees on the Rumph farm is marked that future generations may not forget the birthplace of these two well known commercial varieties.

Samuel H. Rumph had faith in the possibilities of a commercial peach industry in Georgia and in the new variety, Elberta, he had originated. He made many experimental shipments of peaches to distant markets, and helped design containers in which to ship peaches. He operated a nursery and supplied his fellow peach growers with good nursery trees. He aligned himself with every forward looking movement for the advancement of the peach industry, including improvements in the shipment of fruit under refrigeration, and he lived to see many of his ideas and personal efforts bear fruit in a big way. Mr. Rumph died on December 22, 1922, at the age of seventy-one.

Citrus Committee Meeting

AT a recent meeting in Washington, D.C., of the Fresh and Processed Citrus Fruit Industry Advisory Committee, called by the War Food Administration, it was decided that an increase in Texas-grower prices for grapefruit for canning be withheld.

WFA officials said that such an increase would not be justified in view of the present indication of present available supplies of citrus fruits and the prospective movement of citrus fruits in fresh form.

The Bureau of Agricultural Economics, U.S.D.A., estimated the prospective Texas grapefruit production, as of December 1, 1944, at 20,150,000 boxes compared with a production of only slightly more than 17,500,000 boxes in the 1942-43 and 1943-44 seasons.

DDT OUTLOOK

THE first official statement by the entomological profession on the new insecticide DDT was adopted last month by the American Association of Economic Entomologists at the close of its 56th annual meeting.

Excerpts from the statement follow: "We feel that never in the history of entomology has a chemical been discovered that offers such promise to mankind for relief from his insect problems as DDT. There are limitations and qualifications, however . . .

"In agriculture, it is promising against a wide variety of destructive pests. These include most potato insects, many orchard and vineyard pests, numerous vegetable insects, as well as the chief insect enemies of vitally important crops. It appears to be effective against the pink bollworm and outstanding against the Japanese beetle, two of our worst imported pests. It promises also a more practical control of the pests which ravage thousands of square miles of forest, and against many of those which harass livestock.

"DDT will not kill all the important insect pests. It will kill many beneficial insects which are allies of mankind against the destructive species. Because of its toxicity to a wide variety of insects, its large-scale use might create problems which do not now exist. To illustrate, it is a superior insecticide for control of codling moth on apples, but in some sections, at least, will kill certain natural enemies and thus release other insects which may then become major problems.

"The research reports emphasize that we have not had time to develop entirely satisfactory mixtures and dosages of DDT insecticides, nor the methods and timing of application for many possible uses. Modern agricultural pest control often requires mixing several materials in combination treatments, and we know little of DDT's compatibility with many of these others. Researches thus far were made with a material which was produced under pressure for military needs, and which is not necessarily the best form for agriculture.

"We do not know enough about effects on plants, animals and soils. While most plants were not harmed by DDT insecticides in the experiments, injury to squash, corn, tomatoes and possibly fruit trees was reported. DDT is toxic to animal life when large amounts are taken

FARQUHAR
IRON AGE
YORK, PA.

Cuts Spraying Costs



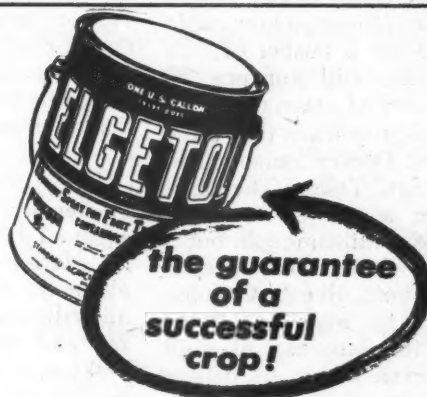
Let's get down to brass tacks! It is a well known fact that most new sprayers are efficient and dependable. But how about sprayers that have been used hard for 10 or 15 years? That's a sore subject with many growers . . . they'll tell you about expensive repairs and replacements that have robbed them of expected or "promised" profits.

Now ask an Iron Age owner! He'll tell

you about ease of maintenance . . . low repair bills (or none at all) . . . pump repairs? . . . gear and bearing failure? . . . "Never had any," say thousands of Iron Age owners! Better find out about Iron Age before you buy. A postcard will bring you the Iron Age Sprayer Catalog . . . no obligation.

Plant and Spray the **IRON AGE** Way

A. B. FARQUHAR COMPANY, YORK, PA.



**Aphis
Bud Moth**

Insure against these insects now! ELGETOL, the original water-soluble dinitro dormant spray, is the accepted standard by commercial growers as a highly effective spray. It combines ovicidal, insecticidal and fungicidal action—an all-around deadly spray to control these pests. ELGETOL contains no oils but is compatible with oil and is water-

**Twig Borer
Crown Gall**

**Oyster Shell Scale
... and other pests**

soluble as well!

ELGETOL 30 is especially recommended when oil is used for the control of scale insects.

You owe it to yourself to investigate ELGETOL now! See your nearest dealer—or write for full information.

STANDARD AGRICULTURAL CHEMICALS, INC.

1301 Jefferson St., Hoboken, N. J.

internally or absorbed through the skin from oil solutions, but reports indicate a reasonable margin of safety. In the light of our present knowledge, heavy deposits on edible

parts of plants should be avoided . . .

"More and larger-scale experimentation is needed. Enough DDT for such research in 1945 should be provided."



From Sgt. Toles

THE RECENT JOINT meeting of the American Pomological Society and the Virginia State Horticultural Society in Roanoke, Virginia, shed many impressionable facts and Sgt. George E. Toles of Camp Lee, Virginia, writes to us about some facts, made by Dr. M. J. Dorsey of the University of Illinois.

"Peach growers should send 'firm ripe' fruit to market, rather than 'green ripe,'" he quotes Dr. Dorsey as saying. Furthermore, it has been proven that ripe peaches, shipped in refrigerated cars, carry as well as green ripe peaches and that they sell four or five times as fast. And, according to Dr. Dorsey, a housewife will pay \$2.50 for a bushel of ripe peaches, but she will not pay 50 cents for a bushel of green ones.

Now, it is good to learn that these remarks of Dr. Dorsey remained in the mind of Sgt. Toles. The business of being a soldier in Uncle Sam's Army is a full-time job, but it is pleasing to learn that, despite this, some soldiers, like Sgt. Toles, still continue to give occasional thoughts to the business of fruit growing. It even makes us believe that there is basis for an opinion that—once a fruit grower, always a fruit grower.

National Farm Safety

THOUGH A proclamation of President Roosevelt set aside the week of July 23 as National Farm Safety Week, this does not mean that the principles and ideas behind this occurrence are relaxed during the remainder of the year. Quite to the contrary, the National Safety Council is on its toes year-round and special attention and consideration are given to the hazards that beset the safety of the farmer and his operators.

In a recent address W. T. Spanton, Chief of the Agricultural Education

Service of the U. S. Office of Education, said:

"The present war has brought in to sharper focus than ever before the importance of safety education. . . . What a reflection it will be on all of us engaged in agricultural work if numbers of our farm boys return from the war unscathed, only to be killed or disabled thereafter as a result of an avoidable accident on the farm. . . ."

His statement is not as far-fetched as it might appear on the surface. In spite of the fact that extensive safety education is given to the various branches of our armed forces, there is reason to be apprehensive about the dangers that lie in the highly specialized and mechanized machinery, continuously being introduced on the farm.

We join with him in his urge that the 9,000 teachers of vocational agriculture in the country assume the major share of responsibility in a farm safety education program which would be given to regular students and to additional farm people who are enrolled in part-time or evening classes in vocational agriculture and farm mechanics.

Our Friends

AT THE END of the Old Year we often are prone to pause and view in retrospect the good and the bad that has transpired during the receding year, to measure the work that was done or left undone, to think of the friends—old and new—who have entered our lives, and it is in this mood that we think of our extension workers.

Surely the fruit grower has no greater outside friend than the county agent of his State's Extension Service. Here is an individual who thinks along the lines of his own thought, an individual who knows the benefits and the problems of his own tasks as a fruit grower. He can look to this county agent as a source of unbiased and non-partisan information whenever the need for advice and assistance arises.

The knowledge that, outside of his own intimate circle, there is a friend to whom he may turn, is a pleasant thought for the fruit grower to carry into the New Year.

Advertising

THE "HARVARD BUSINESS REVIEW" recently published a paper, written by Rayburn D. Tousley, on the advertising of fresh fruits and vegetables. Mr. Tousley points out that there are three main types of advertising programs for such commodities: (1) those carried on by cooperatives, (2) those administered

by the industry on a voluntary basis, and (3) those administered under compulsory state laws. What he says is factual and true. But we should like to elucidate.

None of these agencies would be worthwhile if the nucleus for their advertising programs were not started back in the orchard by the fruit grower. By that we mean the growing of the fruit and the grower's part in this. Quality is the biggest asset any advertising program can propound and quality is bestowed on the fruit by properly selected environment and by the cultural methods employed by the grower.

Without this quality to depend upon, the advertising program of any agency would eventually be worthless.

March of Dimes

EACH YEAR by the drive of the National Foundation for Infantile Paralysis, we are reminded that, in spite of all the marvelous work done by man, he still cannot devise a safety screen behind which any given individual or group can seek protection from disease and its dreadful consequences. The oftenly expressed idea that such a disease, as infantile paralysis, strikes most and hardest in congested cities is unfounded.

For instance, last year in Corning, New York, the first infantile paralysis fatality was a 25-year-old farm wife; and in Franklin County, Kentucky, the first victim was a farm child. Neither had been away from home for sometime before coming ill so it is evident rural residents are not in any degree immuned to this and other diseases.

For this reason, the plea of the MARCH OF DIMES does not stop at the city-limit curb, but it stretches out over the farm lands of the Nation.

Cosmopolitanism

IN NEVADA an English-Spanish phrase book has been published and distributed to farmers who employ Mexican National Farm workers. It is available through the various county extension offices in the State.

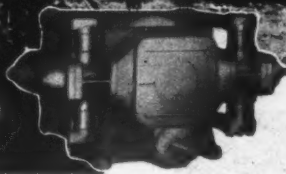
This might be a good idea for other states where foreigners are imported on a vast scale for temporary work on the farms and in the orchards.

People in San Francisco and New York are accustomed to the sound of foreign tongues and now the time has come when a native of our central and western states must also accept the presence of a foreign language in his daily midst, even in his orchard.

Before
you buy a
Sprayer-



look at THIS PUMP



The simplest, sturdiest and most dependable spray pump built.

It's the easiest to keep running, because it has only 1/2 to 1/3 as many moving parts as other pumps built for high-pressure spraying.

Your motor turns **THIS**  which moves **THIS**  back and forth.

Just a sturdy crank that drives a rigid plunger assembly. Those are all the moving parts on a "Friend" pump, except for valve balls the same as on every sprayer. Compare with the moving parts on your present sprayer—crankshafts, connecting rods, wrist pins, pistons and plunger cups.

No bearing troubles—because there isn't one plain bearing on a "Friend" pump. All roller bearings.

Complete lubrication of all parts, including the plungers.

No wear at all on the pump cylinders, as the plungers do not touch.

Long-lasting Plungers and Packing, if kept properly lubricated. Some "Friend" owners have run their sprayers five years with the original plungers and packing.

You never spray with a leaky pump—the "Friend's" packing is taken up instantly by a slight turn of the adjustment screw.

"Instant-Clean Valves," outside where you can get at them. Smooth seats—the valve comes right out.

Does this appeal to your judgment as the most practical sprayer pump you have ever seen? If so—

Talk to a few growers who have switched to "Friend" after using other makes of sprayers. They will tell you that the difference in Dependability—and in Repair Cost—is almost unbelievable.

FRIEND MANUFACTURING CO., Gasport, N.Y.



Tractor-Trailer Sprayers, 4-wheel Cutunders, Truck Sprayers and all other good chassis styles—in a complete range of sizes. Pressures up to 1,000 lbs.



Dusters with the same Reliability as



"Friend" Spray for orchard row crops.



Easiest to Maintain
in Working Order--

Fewest Moving Parts

"FRIEND"



Sizers and Cleaners for every need — from large commercial equipment to small growers' models.

Why Successful Growers Depend on the

Dow Control Program

Growers know that the economy of insecticides is determined not by pound price but by effectiveness, ease of application, and amount required to do the job right.

That's why so many experienced growers are depending on the Dow Control Program for complete season control. By using the entire Dow line, you are sure of getting the best specific control for each pest—you get more protection for less money—you have less planning and less figuring. See your dealer or state experiment station for complete information.

*Dormant
Stage*

DOWSPRAY DORMANT OR DN-DRY MIX—The Dow Control Program begins in the dormant season. Dowspray Dormant or DN-Dry Mix is particularly effective against red mite, rosy and early green aphid, bug moth, mealy plum aphid, pear psylla, San Jose and scurfy scale. Dowspray Dormant is non-caustic, harmless to workers, animals, and spray equipment. Its toxic material is such that less oil is used per tree. DN-Dry Mix lends itself to varied insect control. It can be mixed with water or oil in different combinations depending upon the orchard problem.

Complete Control



for entire season

THE DOW CHEMICAL COMPANY

New York • Chicago • Houston • St. Louis

MIDLAND, MICHIGAN